

**QUESTIONS AND ANSWERS
WATERFRONT TORONTO QUAYSIDE PROJECT:
RELEASE OF THE MASTER INNOVATION AND DEVELOPMENT PLAN**

On June 24, 2019, Waterfront Toronto will publically release Sidewalk Lab's draft Master Innovation and Development Plan (MIDP) for the Quayside project. This Plan has been under development for over 18 months and is highly anticipated by stakeholders.

Q1. What is the Master Innovation and Development Plan that Sidewalk Labs has created?

In October 2017 Waterfront Toronto selected Sidewalk Labs to develop a comprehensive proposal and underlying business plan for a community on the Quayside site based on a series of urban innovation objectives. This proposal is called the Master Innovation and Development Plan.

Q2. What are the next steps now that the MIDP has been made public?

Waterfront Toronto will be leading a series of public and stakeholder consultations to invite feedback on the proposals set out in the draft Plan.

Following the consultation process, Waterfront Toronto will undertake a formal evaluation that will include subject matter experts and a due-diligence panel.

Waterfront Toronto will assess whether the MIDP meets the urban innovation objectives they were seeking, and represents sound solutions and good value for the people of Toronto.

Ultimately, Waterfront Toronto's Board of Directors will decide on a plan for the waterfront area.

Q3. The MIDP is a large comprehensive document. How is Waterfront Toronto making it accessible to the public?

The MIDP is divided into four separate volumes to make it easier to digest.

In addition to the online version, Waterfront Toronto is making copies of the Plan available through various locations of the Toronto Public Library.

Waterfront Toronto has developed a number of tools to promote public understanding of the proposal, including a detailed "note to reader" that summarizes key elements of the Plan.

Waterfront Toronto will also host a series of public consultation sessions on the MIDP.

Q4. What is the Government of Canada's reaction to the MIDP?

The Government of Canada welcomes the public release of the draft MIDP and recognizes the significant effort that Waterfront Toronto and Sidewalk Labs have put into the draft Plan thus far.

This is a large and comprehensive document that has just been released. We too will be taking the time to examine its proposals.

The process of developing of a bold plan for the waterfront demonstrates how collaboration between public agencies, the private sector and external experts can bring ideas and opportunity for Canadian communities and the infrastructure that supports them.

As this is just a proposal, we look forward to closely monitoring how the initiative unfolds over the course of public consultation and expert evaluation.

Q4. How will the three orders of government review the MIDP?

Waterfront Toronto is an arm's length tri-government agency. All three orders of government will therefore rely on Waterfront Toronto's independent Board of Directors and their final decision regarding a plan for the waterfront area. This part of good governance.

At the same time, we are supportive of Waterfront Toronto's formal evaluation process that will assess whether the proposals in the MIDP represent sound solutions and good value for the people of Toronto.

Q5. What is the Government's view regarding the potential for a Google headquarters on Villiers West?

Development of the waterfront area could have a significant catalyzing effect on jobs, innovation and economic development.

The Government of Canada welcomes that the MIDP highlights Canada and the Toronto waterfront as an attractive area to locate and grow a business.

The majority of the land adjacent to Quayside is owned by the City of Toronto. The prospect of locating a new Google headquarters in the waterfront area would therefore be subject to negotiations with the City, who would preside over any decisions in this regard.

Q6. How does the Port Lands Flood Protection Project fit into the Quayside proposal by Sidewalk Labs?

Waterfront Toronto is leading a major flood remediation project for the Port Lands, with the support of all three orders of government. Once completed, the Port Lands Project is expected to unlock 880 acres of waterfront land for future growth and development.

Some of the MIDP proposals extend into the Eastern waterfront, including the Port Lands. As the majority of the Port Lands is owned by the City of Toronto, any proposals for this area would be subject to municipal decision-making processes.

Q7. What is the Government of Canada's position on the data and privacy issues addressed in the MIDP?

The MIDP's proposals must comply with existing federal and provincial privacy laws and be consistent with the principles outlined in the federal Digital Charter.

Q8. How does the federal government's recently announced "Digital Charter" relate to the Quayside project?

The new Digital Charter should help inform Waterfront Toronto's process for evaluating any digital elements included in the MIDP proposals.

Q9. Waterfront Toronto and the City of Toronto are each holding public consultations on the MIDP. Are the provincial or federal governments also holding public consultations?

Waterfront Toronto is leading its own public and stakeholder consultation process starting this summer. They are also working closely with the City of Toronto to support their separate municipal consultation that is expected to take place later this fall.

The Government of Canada supports the public consultation processes being led by Waterfront Toronto and the City, and we look forward to following both discussion as they evolve.

Q10. What is the process for governments to potentially approve the MIDP?

The MIDP is just a proposal. Following public consultation and the conclusion of the evaluation process, the Waterfront Toronto Board of Directors will decide on a plan for the waterfront area.

Should Waterfront Toronto wish to proceed with an agreement with Sidewalk Labs, any approved components of the MIDP must meet all federal and provincial policies and regulations.

MEDIA LINES
WATERFRONT TORONTO QUAYSIDE PROJECT
RELEASE OF THE MASTER INNOVATION AND DEVELOPMENT PLAN

ISSUE

On June 24, 2019, Waterfront Toronto will publically release Sidewalk Lab's draft Master Innovation and Development Plan (MIDP) for the Quayside project. This Plan has been under development for over 18 months and is highly anticipated by stakeholders.

Media may contact the department for the Government of Canada's position on the MIDP or related Sidewalk Lab issues.

MEDIA LINES

General

- The Government of Canada welcomes the public release of the draft Master Innovation and Development Plan for public comment, and recognizes the significant effort Waterfront Toronto and Sidewalk Labs have put into the draft Plan.
- Waterfront Toronto will be actively leading on public and stakeholder engagement to seek views and input on the draft Plan.
- The process of developing of a bold plan for the waterfront demonstrates how collaboration between public agencies, the private sector and external experts can bring ideas and opportunity for Canadian communities and the infrastructure that supports them.

Regarding the next steps for the draft Master Innovation and Development Plan

- The draft Master Innovation and Development Plan will be evaluated through a rigorous process established by Waterfront Toronto.
- Waterfront Toronto will be seeking input on the draft Plan through public consultations. The Plan will also be evaluated by subject matter experts and a due diligence panel.
- Once the consultation and evaluation processes have concluded, Waterfront Toronto's Board of Directors will decide on a final plan for the waterfront area.
- Any approved components of the Plan must meet all federal, provincial and municipal policies and regulations.
- The Government of Canada will continue to support Waterfront Toronto as it reviews the Plan's proposals.
- The Government of Canada will closely follow Waterfront Toronto's extensive public consultation processes as they unfold.

Regarding the potential for a Google headquarters

- Development of the waterfront area could have a significant catalyzing effect on jobs, innovation and economic development.
- The Government of Canada welcomes that Canada and the Toronto waterfront has been highlighted in the Plan as an attractive area to locate and grow a business, including prospect of Sidewalk Labs affiliate Google joining the site.
- The prospect of locating a new Google headquarters in the waterfront area on land adjacent to Quayside would be subject to negotiations with the City of Toronto, who would preside over any decisions in this regard.

Regarding the Government of Canada's Digital Charter

- Canada's new Digital Charter should be helpful in guiding Waterfront Toronto's evaluation of any digital elements included in the Plan's proposals.
- Waterfront Toronto's evaluation process will continue to rely on numerous external experts, including their Digital Strategy Advisory Panel.
- The Digital Charter outlines a principled and balanced approach that will guide how data, trust and privacy fit into federal plans to grow the economy through innovation.

Regarding privacy and data governance

- We understand that Canadians have concerns about how their personal data could be used, which is why there are robust measures in place to protect their privacy and security.
- Government of Canada resources will be made available as needed to support Waterfront Toronto in ensuring that any plans are consistent with federal policy and legislation.

Sidewalk Labs

October 2018

Digital Governance Proposals for DSAP Consultation

DRAFT PROPOSALS

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Sidewalk Labs started with a belief...

By integrating forward-thinking urban design and technological solutions we aim to address urban challenges experienced around the world and fundamentally improve quality of life in cities.

We began by speaking with experts from around the world in fields like mobility, affordable housing, construction, technology, policy, planning, and governance.

From those conversations we envisioned new experiences that could be possible in a new type of city.

Among the new experiences we imagined, we recognized a common theme — that many involved utilizing data in new ways.

We knew that technology could catalyze these solutions, and data would make them better. But we also knew that data for data's sake or tech for tech's sake would not improve quality of life.

From the outset we knew that the monetization of data would not be part of our business model. That is why we committed not to sell personal information or use it for advertising purposes.

The New York Times

TECHNOLOGY

Sidewalk Labs, a Start-Up Created by Google, Has Bold Aims to Improve City Living

June, 2015

The Silicon Valley giant is starting and funding an independent company dedicated to coming up with new technologies to improve urban life. The start-up, Sidewalk Labs, will be headed by Daniel L. Doctoroff, former deputy mayor of New York City for economic development and former chief executive of Bloomberg L.P. Mr. Doctoroff jointly conceived the idea for the company, which will be based in New York, with a team at Google, led by its chief executive, Larry Page.

The founders describe Sidewalk Labs as an "urban innovation company" that will pursue technologies to cut pollution, curb energy use, streamline transportation and reduce the cost of city living. To achieve that goal, Mr. Doctoroff said Sidewalk Labs planned to build technology itself, buy it and invest in partnerships.

A FEW SPECIFIC EXAMPLES

Streets that prioritize safety, pedestrians, and cyclists, because they are designed to anticipate shared, self-driving vehicles that wouldn't need much parking and could communicate with each other and with adaptive traffic lights. This would mean significant amounts of street space given back to pedestrians and cyclists, less congestion, and improved safety.

Buildings with a far more diverse and vibrant mix of uses as a result of "outcome-based code," which doesn't require uniformity of use but rather ensures structural integrity, air quality, and noise levels through conditions-sensing technology.

Significantly reduced carbon emissions achieved by technology that monitors and manages energy demand across the neighbourhood.

...and many more

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We conducted extensive consultations on responsible data use

Over the past year, as Sidewalk Labs prepares a “Master Innovation and Development Plan,” we have had extensive consultations with experts, government, regulators, and residents in Toronto and across Canada.

We engaged Dr. Ann Cavoukian, the three-term Information and Privacy Commissioner of Ontario, who created the internationally adopted **Privacy by Design framework**, as an advisor to the project.

We meet regularly with privacy regulators to talk about our plans and seek guidance. Sidewalk Toronto is the first participant in the Office of the Privacy Commissioner of Canada’s newly formed Business Advisory Directorate.

We convened a Data Governance Working Group of academics, former regulators, technologists including Canada’s leading expert on de-identification, private sector leaders, and community representatives who have advised us on topics ranging from responsible data use in product development to governance and stewardship issues.

We talked to the private sector—early stage startups and large multinationals—about what they see as key opportunities and challenges.

We participated in the public consultations around Canada’s National Data Strategy.

We carefully considered feedback from public roundtables, the Residents Reference Panel, and the Sidewalk Toronto Fellows report.

We studied examples from around the world of best practices, policy innovations, and lessons learned.

We welcomed thousands of people from Toronto and around the world to 307 to engage with our team in conversations about every issue we are looking at, including data.

We established a research grant program to explore a range of complex issues, including the intersection of privacy and the collection of non-personal information in the physical environment.



We engaged privacy regulators on issues related to digital governance

Excerpt from the Office of the Privacy Commissioner of Canada
(Annual Report to Parliament, September 27, 2018).

“We announced in May 2018 our first advisory project involving Sidewalk Toronto, a smart-city endeavor between Waterfront Toronto and Sidewalk Labs,

owned by Google’s parent company Alphabet. The initiative involves building a technology-driven neighbourhood on the city’s eastern waterfront that includes sensors aimed at helping city planners find efficiencies.

Understandably, it is raising many questions about data collection, privacy, where the information will be stored and how it might be used.

Along with colleagues from the Office of the Information and Privacy Commissioner of Ontario, members of our Business Advisory Directorate met with those behind the project to learn more about it and how they were addressing some of these privacy concerns.

We also reminded officials of key privacy principles, including identifying the purposes for collection, obtaining consent, ensuring individuals could access their own personal information and being accountable for protecting the data and being clear about who owns it.

Overall, we are encouraged by Sidewalk Toronto’s efforts to proactively address privacy and data security in the design and implementation of the initiative.

Given the project is still in its early stages, we are continuing to monitor developments and proactively engage with Sidewalk Toronto officials as it progresses. We also hope the advice we provide will be helpful as other smart city initiatives pop up across the country. ”



Office of the Privacy Commissioner of Canada



A range of concerns and questions surfaced with regard to data and the Quayside project

Confusion about Sidewalk Labs' plans related to data, exacerbated by the time it has taken to work through complicated issues

Concern that data monetization is a key part of Sidewalk Labs' business model

An array of questions:

- **Is Sidewalk Labs**, and this project, intended to be a data source for Google?
- **How will data—particularly data collected in the physical environment**, which some argue should be considered a public asset—be protected and governed?
- **Who will own and control the data** that originates in Quayside's physical environment?
- **How do we address the difficulty of obtaining consent** when collecting data in the physical environment?
- **What are the respective roles of Sidewalk Labs**, other private sector players, and governments when it comes to data and technology?
- **How do we ensure all innovators**, including Sidewalk Labs, will be on equal footing in Quayside?
- **How do we make sure the protections of Canadian law apply to all data** originating in Quayside?

AN ONGOING, COLLABORATIVE PROCESS

This presentation to the Waterfront Toronto Digital Strategy Advisory Panel includes ideas formed in response to what we've heard and learned.

We will use this opportunity and ongoing consultations to further develop these ideas into components of the **Master Innovation and Development Plan, a draft of which will be released in early 2019.**

In the coming months, we will return to the DSAP for discussion of several other topics: intellectual property; charter, governance structure and implementation of the Data Trust; data security, including technological approaches to protecting personal identity and information; and case studies on technologies planned to be implemented by Sidewalk Labs in Quayside. We will also continue conversations on the Responsible Data Use Guidelines and the Responsible Data Impact Assessment.

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Sidewalk Labs determined that Privacy by Design would be embedded into all of our projects, from the beginning

Privacy by Design is an essential component of fundamental privacy protection that served as Sidewalk's first building block as we formulated an approach to Responsible Data Use.

FOUNDATIONAL PRINCIPLES	SIDEWALK LABS' IMPLEMENTATION
Proactive not Reactive <i>Preventative not Remedial</i>	Sidewalk Labs is developing and will utilize cutting edge privacy-enhancing technologies including k-anonymity, edge computing, and other de-identification techniques.
Privacy Embedded into Design	Sidewalk Labs conducts Responsible Data Impact Assessments (RDIAs) to enable consistent and transparent decision making. Every project/product starts with a detailed, nuanced discussion of how it is going to interact with data and protect the rights of individuals.
Privacy as the Default Setting	Sidewalk Labs designs projects/products to add value <i>without</i> collecting personal information if possible. If personal information is required, Sidewalk destroys the data as close to the source as possible; or de-identifies data using world-class techniques.
Full Functionality <i>Positive-Sum, not Zero-Sum</i>	Sidewalk Labs not only embeds privacy into urban development projects, but seeks to develop technologies that benefit the project as well as enhance privacy for the individual.
End-to-End Security <i>Full Lifecycle Protection</i>	Sidewalk Labs engages the best and brightest tech and policy thinkers to inform our processes and practices. Sidewalk utilizes (and develops) state of the art technology and processes to protect personal information from loss, theft, and unauthorized access.
Visibility and Transparency <i>Keep it Open</i>	Sidewalk Labs proactively communicates the reason we are collecting data and the benefits to individuals when we ask for their personal information, in a clear and easy to understand manner.
Respect for User Privacy <i>Keep it User-Centric</i>	Sidewalk Labs is developing ways of providing services which allow user-centric data management and anonymous authorization for access control.

PRIVACY BY DESIGN

In October 2010, regulators at the International Conference of Data Protection Authorities and Privacy Commissioners unanimously passed a resolution recognizing Privacy by Design as an essential component of fundamental privacy protection.

Privacy by Design embeds privacy measures into the design of a project, asking questions such as: *"What is the minimum data you really need to accomplish the goal?"* and *"Do you need personal information, or can you accomplish it with de-identified data?"*

Since then, Privacy by Design has developed into a global presence and has been translated into 40 languages.

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We established and continue to refine Responsible Data Use Guidelines that serve as a foundation for our work

These Responsible Data Use Guidelines guide our work on the development of policies that implement **Privacy by Design** and address data stewardship and access to data.

- **People first.** All projects must apply Canadian values of diversity, inclusion, and privacy as a fundamental human right.
- **Beneficial public purpose.** There must be a clear public purpose and value to the proposed use of Urban Data. A proposal cannot collect data for data's sake.
- **Transparency and clarity of usage.** Projects must always inform individuals of how and why their information is being collected and used, and do so in a way that is proactive, clear, and easy to understand. For Urban Data in public spaces, where meaningful consent cannot be reasonably or reliably achieved, clarity of usage can include efforts such as physical signs notifying people of a data device, or informational websites describing a service or program in greater detail.
- **Meaningful consent.** If a person opts into a service that uses individual identification, that person must have meaningful consent or control over how the information is used. Meaningful consent must go beyond current privacy policies, which are typically long and written in legalese, balancing the substance necessary for legal consent with a simplicity that people can understand.
- **De-identify by default.** Urban Data that includes personal information must be "de-identified" by default — designed not to trace back to any individual. For example, if a traffic counter collects an image of three cars that includes license plates, this data can be de-identified by processing a count of "three cars" and deleting the raw image containing the license plate information. Once de-identified, a data set is considered to no longer contain personal information, as the risk of re-identification is extremely low.
- **Open by default.** All de-identified Urban Data gathered in the public realm will be made open, free, and available in the public domain by default to encourage innovation and reflect the role of Urban Data as a collective good.
- **No ads by default.** By default, companies, organizations, or individuals will not sell Urban Data containing personal information to third parties or use it for advertising purpose.

NEED FOR A ROBUST FRAMEWORK

The pace at which the world is changing has underscored the need — and the opportunity — to create a new framework for responsible data use in Quayside:

- **People are more connected now** than ever before, and the proliferation of data raises real concerns about the impact on personal privacy.
- **Recent high-profile examples of data and privacy breaches** or misuse have further evidenced the potential impact of inadequate privacy protection.

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Sidewalk Labs' proposed approach to digital governance aims to serve as a model for cities around the world

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

Our approach to digital governance is based on the position that:

- **Independent governance** is necessary to protect personal and public interests across areas of data stewardship, privacy, access, and, security—in addition to government enforcement of Canadian and Ontario privacy laws and regulations
- **All parties**, including Sidewalk Labs, collecting and/or using data in the physical environment of Quayside will be held to the same high standards of digital governance
- **Information architecture and services** should be open, enabling and promoting innovation by the many, not the few

Based on these positions, we propose four key components of a framework for digital governance in Quayside:

- **Responsible Data Use (RDU) Guidelines:** Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation
- **Civic Data Trust:** An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Lab. With the Data Trust, we move away from entities, including Sidewalk Labs, solely owning and controlling these assets.
- **Responsible Data Impact Assessment (RDIA):** Publicly auditable assessment for all public and private digital services required before data is collected and used
- **Open Standards:** Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation; the Data Trust might consider encouraging or requiring open standards, as well

KEY TAKEAWAYS

No one should own original information collected from Quayside's physical environment—including Sidewalk Labs. Instead, this "Urban Data" should be under the control of an **independent Civic Data Trust**.

To protect privacy, all entities proposing to collect or use Urban Data (including Sidewalk Labs) will have to file a **Responsible Data Impact Assessment** with the Trust that is publicly available and reviewable.

With regard to the use of data, **one set of rules will apply to everyone**. Sidewalk Labs will not receive any special treatment.

Sidewalk Labs will use open standards for any digital infrastructure and services it provides—so anyone can plug in or compete.

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Data Trusts are beginning to be used to govern data in urban contexts

A Civic Data Trust is a model for stewardship and management of data and digital infrastructure that approves and controls the collection and use of data for the benefit of society and individuals.

A Civic Data Trust is particularly useful where data is being collected and used in an urban environment and there are challenges in obtaining meaningful consent.

It is an independent third party that ensures that value from data goes to the people, communities, government, industry, and society from which it was collected, and that data privacy and security are protected. **A Data Review Board**, assembled of diverse members of the community, would monitor and enforce data collection and use.

Other cities, countries, and organizations around the world, including Canada, Barcelona, Estonia, Guernsey Island, and the Copenhagen-Hitachi City Data Exchange, have implemented variations of data trusts.

GLOBAL EXAMPLES OF DATA TRUSTS

Data trusts come in different forms and structures, two of which are:

Barcelona Model: Trusted Intermediary and a Data Commons

Barcelona's CityOS is the city's internal data lake, which is managed by the city's Chief Data Officer. In this model, all of the data is pooled into one central repository, a "commons", and managed by a trusted intermediary. Some datasets are made publicly available under degrees of openness via APIs. Some data is available through Decidim, Barcelona's digital democracy portal, or BCNow, its data dashboard. 'Sentilo' is Barcelona's main sensor platform for environmental or ambient data. Barcelona's projects are funded by the EU Commission's DECODE.



Estonia Model: API Framework Management

Estonia's X-Road data exchange platform is based on an approach where each collector of data stores its own data, which are standardized and accessed through APIs that are managed by the Trust. It is a repeatable framework of terms and conditions with APIs that allow developers and others to access data for testing, product development, and data analytics.



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Proposal: A Civic Data Trust for Quayside

The stewardship, management, and responsibility for data that is collected and used needs to sit with an independent entity whose sole responsibility is to protect the public interest.

The Trust would be an independent body with the mandate of being a steward of data collected in the physical environment, which we call **Urban Data**.

- **Following Responsible Data Use Guidelines, the Trust would approve and control** the collection and use of, manage access to, and, potentially, store Urban Data originating in Quayside. This would be on top of—not in the place of—existing law, regulation, and government enforcement.
- **The Trust would, as a default, make de-identified Urban Data freely and publicly accessible—and not owned by any private entity.** The Trust would consider applications to collect Urban Data that involves personal information (e.g. CCTV cameras) or proposals to collect Urban Data on a proprietary or commercial basis.
- **In performing those functions, the Trust would be guided by a charter** focused on ensuring that Urban Data is collected and used in a way that is beneficial to the community, protects privacy, and spurs innovation and investment.
- **The governance of the Trust** would apply to all entities operating in Quayside.

BENEFITS OF THE CIVIC DATA TRUST

- **Protects** the public interest
- **Curtails** private ownership of data that might reasonably be considered a public asset
- **Ensures** compliance with data protection and privacy laws
- **Upholds** a set of values and processes for the beneficial use of data
- **Organizations** can share their data with other entities across different sectors for mutual benefit
- **Access** to different data sources allows us to understand public problems from many angles
- **Opportunities for new**, innovative, and data-driven solutions to public problems
- **Data collection** and use is made transparent
- **Institutions** can better monitor and evaluate the real-world impacts of policies

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Defining Urban Data

Data collected in the physical environment, particularly in public spaces, will be the domain of the Civic Data Trust.

Urban Data is data collected in a physical space in the city, which includes:

- Public spaces, such as streets, squares, plazas, parks, and open spaces
- Private spaces accessible to the public, such as building lobbies, courtyards, ground-floor markets, and retail stores
- Private spaces not controlled by those who occupy them (e.g. apartment tenants)

Urban Data is different from other data and requires a different approach because:

- It could reasonably be considered a public asset.
- Individual consent is hard to achieve in public or publicly accessible spaces, unlike when individuals provide data in more traditional contexts.
- Existing requirements attached to the collection of Urban Data only apply when it is identifiable, and are often not followed; there are no requirements attached to the collection of Urban Data that is not personal information.
- The community has the right to expect reasonable protection and proper use of data collected in these spaces.
- Such data raises potential community surveillance concerns.
- Urban Data is anchored to geography, unlike data collected through websites and mobile phones, and lends itself to local governance.

HOW OUR FOCUS ON URBAN DATA REFLECTS WHAT WE'VE HEARD

It acknowledges the consent challenge involved with Urban Data and puts in place a mechanism to obtain “community consent” by:

- **Placing** governance and oversight in the hands of an independent entity that represents the community interest
- **Requiring** Privacy by Design
- **Providing** transparency for the community
- **Enlarging** the types of data that deserves protection beyond personal information to data that has the potential to impact people
- **Focusing** on the entire ecosystem in Quayside, enabling responsible data use and across the board privacy protections

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Proposal: Civic Data Trust

The Civic Data Trust will follow a clear and consistent process that gives it oversight of Urban Data gathered in the public realm.

The Civic Data Trust will sit at the centre of a process established to ensure adherence to Responsible Data Use Guidelines

01

RDIA Filing

Before any collection and/or use of Urban Data can occur, a Responsible Data Impact Assessment (RDIA) must be conducted and filed with the Civic Data Trust, as part of an application to commence collection and/or use. *(See Section 3 for details)*

02

Approval

Many applications to the Civic Data Trust will be able to be self-certified, submitted, and advanced to the registration step. These will generally be applications for the collection of non-identifiable data that will be made freely and publicly available.

Other applications will require substantive review by the Civic Data Trust. These may involve the collection of Urban Data that is identifiable or collection of Urban Data on a more proprietary basis.

03

Registry

Civic Data Trust will approve placement of devices used to collect Urban Data and maintain an online registry of RDIA's and map of device locations, with easily accessible information on what data is being collected, why, how, where, and by whom.

04

Managing Access

By default, non-personal Urban Data will be open and freely accessible to the public.

In cases where Urban Data access is restricted, the Civic Data Trust will manage access to this data.

This could be accomplished in a variety of ways, from having the Trust actually hold the data as a repository to having it set rules that require collectors to publish data in real time.

05

Enforcement

The Civic Data Trust retains the duty to audit all uses and remove digital devices in the event it discovers a violation.

If the Civic Data Trust were to serve as a repository for data, it would have the ability to shut down access by bad actors.

The question of more traditional enforcement authority needs to be considered as part of ongoing consultation.

06

Exemptions

The Civic Data Trust will have the authority to exempt from registration specific uses that, in its judgment, do not have implications for personal privacy by virtue of their limited technical capabilities, such as water-pressure sensors on building pipes or weight sensors in freight elevators. (The Trust will have no power to grant exemptions from existing privacy law.)

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Data Typologies

Depending on issues of place, context, and control, different kinds of Urban Data merit different kinds of oversight.

	Governance Considerations	RDIA & Approval Process	Role of Data Trust
Urban Data Type 1 Collected in the public realm (e.g. pedestrian counters, street-facing cameras)	<ul style="list-style-type: none"> Individuals have little control over collection of Urban Data in these spaces This data could reasonably be considered a public asset and will therefore as a default be made freely and publicly available Private control or collection of any data that is personally identifiable requires substantive review by Data Trust 	<ul style="list-style-type: none"> RDIA and applications to Data Trust are mandatory in all cases. Applications to Data Trust can be self-certified if data is de-identified and freely and publicly available, and applicant does not seek proprietary control Otherwise Data Trust substantively reviews applications Existing requirements, including related to signage, in effect and subject to actual enforcement 	<ul style="list-style-type: none"> Receives applications and RDIA's Reliably and speedily—potentially, automatically—approves accurate, self-certified applications Substantively reviews applications that do not meet the requirements for self-certification Registers placement and maintains a publicly available registry of devices and associated applications and RDIA's Manages public availability and, where applicable, private access to various data streams
Urban Data Type 2 Collected in privately-owned but publicly accessible spaces Different classes within this type depending on the kind of space (e.g. cameras in large building lobby vs. a small store)	<ul style="list-style-type: none"> Individuals have little control over collection of Urban Data in these spaces Depending on the class (see next column), arguments for data as a public asset may be stronger or weaker In any circumstance, the public has an interest in a fulsome understanding of data collection mechanisms 	<ul style="list-style-type: none"> RDIA and applications to Data Trust are mandatory in all cases. Class A (e.g. camera in a large building lobby): Applications to Data Trust go through same process as Urban Data Type 1 Class B (e.g. small café camera): All applications to Data Trust can be self-certified Existing requirements, including related to signage, in effect and subject to actual enforcement 	<ul style="list-style-type: none"> Class A: Same as Urban Data Type 1. Class B: <ul style="list-style-type: none"> Reliably and speedily—potentially, automatically—approves accurate, self-certified applications Registers placement and maintains a publicly available registry of devices and associated applications and RDIA's No substantive review No access management; data not made publicly available by default
Urban Data Type 3 Collected in fully private spaces, generally homes or offices (e.g. thermostats, home security cameras, sensors for building code compliance)	<ul style="list-style-type: none"> Data cannot reasonably be considered a public asset May be necessary to achieve community goals (e.g. temperature monitoring for energy demand management) May have particular privacy implications because devices are in private spaces, and devices in tenant spaces raise consent issues 	<ul style="list-style-type: none"> Devices installed by residents in their private spaces would be entirely exempt from this regime RDIA and applications to Data Trust are mandatory in all cases of devices installed by a landlord or builder Parties can self-certify if they abide by Responsible Data Use Guidelines, provide full disclosure, and allow opt-out Otherwise, Data Trust substantively reviews applications 	<ul style="list-style-type: none"> Reliably and speedily—potentially, automatically—approves accurate, self-certified applications Substantively reviews applications that do not meet the requirements for self-certification Registers placement and maintains a registry of devices and associated applications and RDIA's <ul style="list-style-type: none"> Open question regarding whether this registry should be made publicly available. Audits de-identification and storage.
Traditionally Collected Data Involving Direct Consent (e.g. apps and websites)	<ul style="list-style-type: none"> Issue that extends beyond Quayside Harder to see this data as a public asset Local, geographically-bound governance regime unworkable given the lack of a relationship between this kind of data collection and geography. Sidewalk Labs will hold itself and its partners to high standards given the role it will play in this community 	<ul style="list-style-type: none"> RDIA is not required for third parties Sidewalk Labs commits to filing RDIA's with the Data Trust so that they are publicly transparent 	<ul style="list-style-type: none"> Data Trust not involved, other than to receive and publish Sidewalk Labs RDIA's, as well as any voluntarily filed RDIA's; and to manage any voluntarily contributed data

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All collection and use of Urban Data will require a Responsible Data Impact Assessment

All entities seeking to collect and/or use Urban Data in Quayside will submit Responsible Data Impact Assessments (RDIAs) as part of applications to the Civic Data Trust. The RDIA process will be a core tool for ensuring adherence to the community's Responsible Data Use Guidelines.

The RDIA is an assessment of the prospective use of data involved in an activity, including an analysis of whether the benefits of the activity outweighs the risks involved. It is a vehicle for assessing alignment with principles, legal requirements, and stakeholder expectations.

Responsible Data Impact Assessments are conducted at the design phase, prior to data collection or use.

The RDIA enables parties to make decisions in a consistent, transparent way—and to do so reasonably quickly.

Outcomes

- ✓ Qualitative + Quantitative evaluation
- ✓ Appropriate stakeholders are involved throughout the project
- ✓ Demonstrable accountability
- ✓ Transparent and proactive
- ✓ Ensures Privacy by Design from the design phase, not an afterthought
- ✓ Enables de-identification by default



RESPONSIBLE DATA IMPACT ASSESSMENT

- 1. PURPOSE** of the project/product/service, who is involved and who is accountable
- 2. DATA:** a full understanding of the data, sources, data use and parties involved
- 3. IMPACT** on parties and, in particular, individuals
- 4. ANALYZE** risks and benefits

PRIVACY IMPACT ASSESSMENT

(IF APPLICABLE): If the project/product/service involves the collection or use of Personal Information, a Privacy Impact Assessment is also required.

DECISION: Whether an appropriate balance of benefits and mitigated risks supports the data processing activity

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Responsible Data Impact Assessment Section 1: Purpose

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Project Name/Description

Project Objective

What is the ultimate goal of this project?

If a pilot or partnership, what does it seek to demonstrate or achieve?

Does the activity fit within a larger theme of work that is currently being contemplated or undertaken?

Stakeholders

Who is collecting/using the data, and are the other stakeholders involved?

e.g. partners, vendors, customers, government, etc.

Note: This slide has been updated
for clarity from the 10/15 version.

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Responsible Data Impact Assessment Section 2: Data

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Nature of Data

What specific types of data will be collected, tracked, transferred, used, stored or processed?

If project is at the concept stage, what data do you anticipate collecting or using?

Is the data about people, and if so, is it identifiable to a person or is it de-identified?
If Personal Information is collected, a Privacy Impact Assessment is also required

Is the data or anticipated use of the data sensitive?
Sensitive categories of data and/or use include information that is used to analyze or make decisions based on race, ethnic origin, religion or philosophical belief, gender, sexual orientation, physical or mental health, information or data that could be used to facilitate identity theft. A sensitive use of data may also be where there is a reasonable expectation the use of the data would be embarrassing or be considered sensitive to the individual whose data it is.

Sources of Data

Will data be provided by third parties?

Will data be collected by sensors? What type, and where are the sensors located?

Note: This slide has been updated for clarity from the 10/15 version.

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Responsible Data Impact Assessment Section 3: Impacts

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Impact to Individuals and Groups

Identify all the parties impacted by this data activity, and the impacts it will have.

What are the stated and unstated expectations of individuals, groups of individuals, and society for each use of the data?

Benefits

What are the benefits to the individual or groups of individuals?

What are the benefits to society?

What are the benefits to other stakeholders?

Risks (Inherent)

Considering all the factors relating to the data, the likely data use, the identifiability and sensitivity of the data, what are the risks to the individual, groups of individuals, society?

Is it foreseeable that data use might seem surprising, inappropriate or discriminatory or might be considered offensive causing distress or humiliation?

Could the data be used in a way that may result in a group of individuals being treated differently from other groups of individuals?

Is the accuracy and/or quality of the data appropriate for the data activity? Does the relative accuracy of the data have an impact on individuals/groups?

Note: This slide has been updated for clarity from the 10/15 version.

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Responsible Data Impact Assessment Section 4: Analysis

Illustration of what the Assessment form might address.

SAMPLE RESPONSIBLE DATA IMPACT ASSESSMENT

Mitigating Risks

What are the technical and procedural safeguards (mitigating controls) that are being implemented to prevent and mitigate risks described above should they occur (e.g. encryption and delinking of data or increased transparency)?

How have Privacy by Design control standards been applied?

Are you using analytical driven models, insights or algorithmic decision making, that could impact individuals?

Is there a less data intensive way to achieve the goals of the data activity (including potential insights)?

Decision Analysis

Is there a net benefit?

Are there any other factors that should be considered?

Does the data activity comply with all laws, cross-border, policy, contractual, industry or other obligations organizational policies and self-regulatory commitments?

Does the purpose of the activity fit within the values of society?

Have all the stakeholder concerns identified in the Governance of Data section been appropriately addressed?

Is their appropriate Notice, Consent and Control as part of the data collection and use?

After considering all the above factors, is the activity a "go", "no go", or should some aspect of the activity be recalibrated to reduce the residual risk?

Note: This slide has been updated for clarity from the 10/15 version.

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Hypothetical Case Study 01: Traffic Management System

Traffic management system in Quayside by Sidewalk Labs

Future hypothetical: Sidewalk Labs is working to implement a plan approved as part of the Master Innovation and Development Plan for a traffic management system in Quayside, which involves pedestrian counters and adaptive traffic lights.

APPLICATION 1

Pedestrian Counters

Sidewalk Labs submits an application and RDIA for pedestrian counters to the Data Trust. Because the data is non-identifiable and will be made freely and publicly available, it can be self-certified.

- **The Data Trust publishes the RDIA** and adds the locations where the pedestrian counters will be installed to its public registry.
- **The pedestrian counters are installed**, and the data from the counters is made freely and publicly available, and not owned by Sidewalk Labs.
- **Pedestrian count data is used** as part of the traffic management system.
- **The data is also accessed by a community group** to make the case for the need for a street redesign.

APPLICATION 2

Adaptive Traffic Lights

Sidewalk Labs submits an application and RDIA to deploy devices developed by a partner that use computer vision to compute de-identified paths and speeds of cars, cyclists, and pedestrians.

- **Depending on the policies of the Data Trust**, this application may:
 - (1) be allowed to self-certify because the data is de-identified in real time; or
 - (2) be subject to substantive review and, if real-time de-identification is confirmed, approved.
- **The Data Trust publishes the RDIA** and adds the locations where the adaptive traffic lights will be installed to its public registry.
- **The adaptive traffic lights are installed**, and the de-identified data feeds are made freely and publicly available, not owned by Sidewalk Labs.
- **That data is used** as part of the traffic management system.
- **The data is also accessed by another company** that believes it can process this data more effectively and produce better results.

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Hypothetical Case Study 02: Parks Improvement Study

Parks improvement study by a new third-party startup

Future hypothetical: Startup A is working on a project to make recommendations about improving environmental conditions and usage patterns at several parks throughout the City, including one in Quayside. This hypothetical scenario involves both air quality sensors and video cameras in the park.

APPLICATION 1

Air Quality Sensors

Startup A submits an application and RDIA for air quality sensors to the Data Trust. Though the data is non-identifiable, Startup A will incur a substantial financial burden in installing the sensors and seeks to recoup its investment by selling the data to companies trying to reduce their negative environmental impacts. Startup A asserts that it will not move forward with this project if the data is made freely and publicly available from the start.

- **This application may not be self-certified** because Startup A seeks to maintain proprietary control of the data.
- **The Data Trust reviews the application, judges it to provide a net benefit to the public, and approves on the condition** that proceeds from the sale of the data will be shared between Startup A, the City, and the Data Trust.
- **The Data Trust publishes the RDIA** and adds the locations where the air quality sensors will be installed to its public registry.
- **The air quality sensors are easily installed** using open standards-based mounts, and access to the data is limited to Startup A.
- **After a time, the data is made freely and publicly available.** It is then accessed by a weather app providing air quality alerts that decides to start funding the ongoing operations and maintenance of the technology.

APPLICATION 2

Video Cameras

Startup A submits an application and RDIA for video cameras to capture usage patterns at the park in Quayside.

- **This application may not be self-certified** because it involves the collection of personal information.
- **The Data Trust reviews the application and approves on the condition** that the video footage will be used only for the purposes of the park improvement project, and will be destroyed on a rolling basis after seven days. Startup A must also, in accordance with existing requirements, prominently post signage around the cameras.
- **The Data Trust publishes the RDIA** and adds the locations of the cameras to its public registry.
- **The cameras are easily installed using open standards-based mounts,** and the footage is reviewed and then destroyed on a rolling basis, meeting the seven-day requirement.

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Quality of life comes first—no tech for tech's sake

This neighbourhood is not about technology for technology's sake.

We are focused on technological and urban design solutions to real problems.

RECAP

From the start of this project, we imagined a set of new experiences that could be possible in a new type of city.

Streets that prioritized safety, pedestrians, and cyclists, because they are designed to anticipate shared, self-driving vehicles that wouldn't need much parking and could communicate with each other and with traffic lights. This would mean significant amounts of street space given back to pedestrians and cyclists, less congestion, and far fewer accidents.

Buildings with a far more diverse and vibrant mix of uses as a result of "outcome-based code," which doesn't require uniformity of use but rather ensures structural integrity, air quality, and noise levels through conditions-sensing technology.

Significantly reduced carbon emissions achieved by technology that monitors and manages energy demand across the neighbourhood.

We have identified a set of innovations that could help improve urban life in Quayside. A non-exhaustive list:

Mobility	Traffic management technology and adaptive traffic lights to reduce congestion and increase safety.
Public Realm	Structural innovations to create active weather mitigation tools that can be deployed based on real-time hyperlocal measurements of rain and wind.
Sustainability	Energy demand management technology, thermal heating and cooling, and other innovations to push toward climate positivity.
Community	Engagement tools to provide informed input into neighbourhood decision making.
Buildings	Construction innovation to enable a mix of affordability levels and real-time monitoring of building conditions to enable a mix of uses.
Access + Equity	Truly ubiquitous connectivity and focused efforts to improve digital literacy to bridge the digital divide.
Accessibility	Tools to make the community more accessible, such as spoken information about the physical environment and sensors to detect snow in curb cuts.

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Sidewalk Labs will build solutions—but not exclusively

We have identified solutions we believe will help make this a great place for people to live, and we are committed to bringing those to life. But we will also encourage others to create better solutions—because we will never have all the best ideas.

AN EXAMPLE: ENERGY USE

One key approach to creating a climate-positive neighbourhood is to measure how energy is used and optimize it using machine learning. Sidewalk Labs will work with partners to develop technology to measure aggregated and de-identified energy use by systems including heating and cooling, apply algorithms to propose optimizations, and build control systems to implement those optimizations. Aggregated and de-identified energy use measurements would be considered Urban Data and will be made freely and publicly available by the Civic Data Trust in order to stimulate research and development of even better techniques by others.

To accomplish this, Sidewalk Labs will:

- Identify and deploy **devices from the market that measure energy use and environmental conditions**
- With local partners, develop and deploy a **ubiquitous network** to allow those measurements to be communicated in real time
- Design **standardized mounts** for light poles and buildings to reduce the cost of deploying network access points and devices
- Build a **digital map** of the neighbourhood—with an unprecedented level of accuracy
- Create an **open data hub** that will provide real-time access to data in standard formats through well-documented interfaces in order to make measurement data that goes to the Data Trust easily accessible

This will not be done to the exclusion of others. To the contrary, this place will be more successful when alternatives are encouraged:

- When better devices are developed, it should be **easy to replace Sidewalk Labs-developed technology**
- We expect and encourage **many network providers** to provide service in this neighbourhood
- Better approaches to deploying network access points and devices will be able to supplant ours
- The digital map will be created by broad collaboration and be made freely and publicly available to all by a Civic Data Trust
- There will likely be several data hubs, making it easy to understand and work with publicly available data

The same open approach will apply to solutions for **mobility, public realm, community, buildings, accessibility**, etc.

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Enabling innovation by a wide range of players

Designing technology to support our quality of life goals has revealed patterns: common pieces of infrastructure and specific services that are required to bootstrap digital innovation in the neighbourhood for Sidewalk Labs and others.

WHAT SIDEWALK LABS WILL BUILD

Taking the same approach to designing solutions for **sustainability, flexible public realm, community, buildings, accessibility**, etc. leads us to believe that we should create a new standard for digital infrastructure and services in cities, including:

- Ubiquitous connectivity
- Standardized mounts and power
- A high-resolution 3D map of the neighbourhood
- An open data hub which will provide real-time access to data in standard formats through well-documented interfaces

The fact that Sidewalk Labs is committing to build these components does not preclude others from deploying technology that improves on, competes with, or replaces them.

WHAT OTHERS WILL BUILD

The lion's share of technologies that make Quayside unique will be developed and deployed by an ecosystem of many innovators:

- Just as in the World Wide Web, multiple providers can coexist, and technological solutions can integrate, as long as they agree on standards
- Others should be welcome to provide better, different, cheaper infrastructure and services
- We hope that this will enable a wide range of Canadian startups to innovate more quickly, and use Quayside as a springboard to success
- All systems collecting or using Urban Data —whether created by Sidewalk or third parties—will be subject to Civic Data Trust governance

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Open architecture makes this possible

Sidewalk Labs will not create a centralized, monolithic platform. Rather, we will work with partners to create an open architecture—one that enables and encourages collaboration and experimentation.

In order for anyone to innovate, and have the opportunity to replace components that Sidewalk Labs and others build, there must be no proprietary lock-in. This requires:

- **Well-documented, standardized formats and interfaces**

- Any party will have the information required to build a replacement component for any urban system, or to create an entirely new application.

- **Easy access to public-domain data**

- Standards are worthless if it's not possible to get access to data. For example, devising a new optimization algorithm for traffic requires training and test data, so traffic volume data should be made broadly available.

- **Data portability**

- An existing system will likely have access to historical data provided to it by neighbourhood systems. This data should be able to be exported from the existing system so that new systems are not at a disadvantage for training and bootstrapping.
- This is similar to email systems that allow the user to export all of their historical email messages so that they can move to a new provider, eliminating lock-in.

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Urban Digital Architecture Sketch

Each function within the urban technology stack will be served by Sidewalk Labs and also by others. Interchangeability requires standardized interfaces and formats.



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Example of an Open System: The World Wide Web

If urban technology used open standards in the same way that the World Wide Web does, innovation would explode, and the risk of vendor lock-in would be dramatically reduced.

You can use any browser...



to visit any web page...



served by any web server.



Example: World Wide Web Standards

Standards enable innovation and competition.

Formatting

Hypertext Markup Language (HTML),
Cascading Style Sheets (CSS)

Images

Portable Network Graphics (PNG),
Joint Photographic Experts Group (JPG)

Interactivity

JavaScript

Communication

HyperText Transfer Protocol (HTTP)

Security

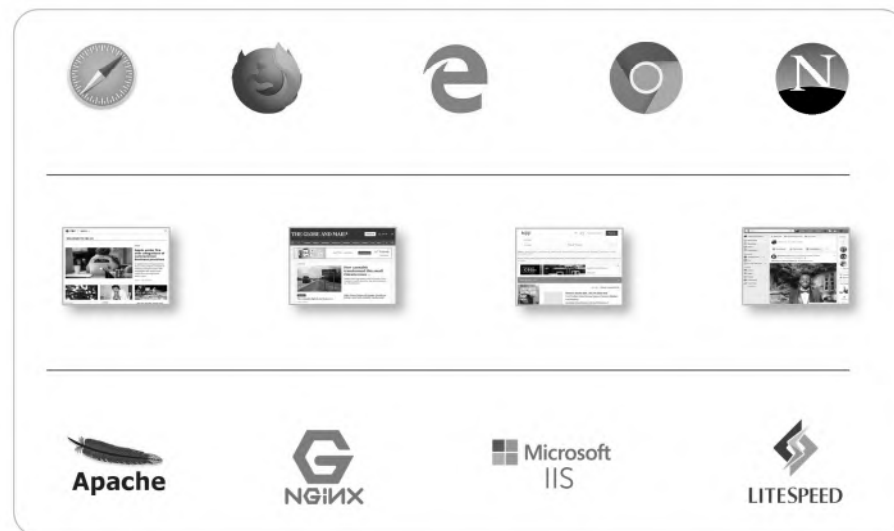
Secure Sockets Layer (SSL)

Anyone can build a web browser

as long as it implements standards like HTML, CSS, JavaScript, HTML and SSL. The most popular browsers are free, and their cores are open source.

Likewise, anyone can build a web server as long as they implement HTTP, SSL, etc. The most popular servers are free and open source.

With partners, we hope to significantly advance a competitive, innovative urban technology ecosystem by using, developing, and promulgating standards.



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Ensuring the protection of data in accordance with Canadian Law does not require data localization

Canada and other places with leading data protection regimes have recognized the ineffectiveness of one-size-fits-all and/or technology-specific requirements, and the importance of context—that the best way to achieve data protection in any given context depends on the types of data, entities, and jurisdictions involved.

With specific exceptions, data localization is not presently a requirement of Canadian or Ontario law. In addition, data localization:

- Is not necessary to ensure that data that originates in Canada is handled in accordance with Canadian law with regard to privacy protections, which can be achieved through contractual and technical mechanisms
- Presents technical and operational obstacles, including access to redundant storage locations to ensure security and availability
- Increases costs, which may raise barriers to entry for less mature companies
- Runs counter to the way information travels across the internet, without regard to geographic boundaries

For these reasons, Sidewalk Labs does not believe that it is sensible to impose a data localization requirement for innovators in Quayside.

Sidewalk agrees with the position of the Business Council of Canada, as expressed in its September 2018 Report on the Data Economy

- “ *Individuals and businesses should be free to transfer data across provincial and international borders, provided appropriate safeguards are in place.* ”
- “ *There should be a general presumption against local data storage and processing requirements. Governments may need to exercise sovereignty over data flows in rare cases when it is necessary to protect the public interest.* ”

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In summary: our proposed approach

Robust governance, an open system, and protection of data.

Establishment of a Data Trust: Sidewalk proposes the establishment of an independent Civic Data Trust, which would approve and control the collection of, manage access to, and potentially store data collected in the physical environment, known as “Urban Data.”

Data Trust to Make Urban Data Freely and Publicly Available: As a default, the Data Trust would make de-identified Urban Data freely and publicly accessible, eliminating the concept of data ownership. Specific approval by the Data Trust would be required for entities to collect Urban Data with personally identifying information (such as CCTV cameras) or Urban Data collected on a more proprietary basis.

Responsible Data Impact Assessments: Responsible Data Impact Assessments (RDIAs) would be used to ensure Privacy By Design and adherence to Responsible Data Use Guidelines in every part of the project and all collection of Urban Data, whether by Sidewalk or other parties. RDIAs would be filed with the Data Trust before the collection and/or use of any Urban Data within the project geography by any entity.

RDIAs and Registry of Devices Maintained by the Data Trust: RDIAs, along with a registry of devices collecting Urban Data, would be maintained and made publicly available by the Data Trust.

An Ecosystem of Technologies by Many Innovators: Sidewalk anticipates providing specific pieces of critical digital infrastructure and specific, use-case-driven technologies to achieve quality-of-life goals. All technologies provided by Sidewalk will be based on open standards, making it easy for the lion’s share of technology in the neighbourhood to be provided by others.

Data Always Handled in Accordance with Canadian Law: To ensure that Canadian law and values are applied to data, Sidewalk Labs will use a toolbox of mechanisms, including contractual protections, technical protections, and edge computing, where data is processed on-device and not transferred to a central server. Sidewalk does not propose a data localization requirement specific to Quayside.

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Reviewing what we heard

How our thinking addresses key questions.

Confusion about Sidewalk Labs' plans related to data, exacerbated by the time it's taken to work through complicated issues

We hope that these proposals have provided some clarity on how we are approaching a range of critical issues—all subject to your feedback and ongoing consultation.

Concern that data monetization is a key part of Sidewalk Labs' business model

It is not, and the governance of the Civic Data Trust is intended to ensure that no private entity can gain unfettered access to and ownership of data collected in Quayside.

Is Sidewalk Labs, and this project, intended to be a data source for Google?	No (see p. 4)
How will data—particularly data collected in the physical environment, which some argue should be considered a public asset—be protected and governed?	By an Independent Civic Data Trust, using Responsible Data Impact Assessments to promote the beneficial use of data and transparency (see p. 13)
Who will own and control the data that originates in Quayside's physical environment?	The concept of ownership will not apply to Urban Data in most cases, with the Data Trust making de-identified data freely and publicly available as a default matter and/or controlling access. Data will be under the control of another entity only in select cases, which will be determined once an RDIA has been submitted and the Trust has examined the public benefits involved. (see p. 13)
How do we address the difficulty of obtaining consent when collecting data in the physical environment?	By implementing a robust form of community consent represented by the Civic Data Trust (see p. 14)
What are the respective roles of Sidewalk Labs, other private sector players, and governments, when it comes to data and technology?	<ul style="list-style-type: none"> • Sidewalk provides some critical infrastructure and core services (see pp. 27-29) • Other players provide the lion's share of technology (see pp. 29-33) • Governments enforce privacy laws (see pp. 10, 13) • Data governance provided independently by the Data Trust, which may involve government in its establishment or ongoing work (see p. 13)
How do we ensure all innovators, including Sidewalk Labs, will be on equal footing in Quayside?	Through open standards; a limited, catalyzing role for Sidewalk Labs; and a governance model that applies equally to all players (see p. 30)
How do we make sure the protections of Canadian law apply to all data originating in Quayside?	We can ensure that data will always be handled in accordance with the laws of Canada without a data localization requirement (see p. 35)

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Some of our open questions

In addition to seeking general feedback on this presentation from the DSAP, a number of specific questions are on our minds.

1. **What needs to be added** to the Responsible Data Use Guidelines to avoid vendor lock-in?
Are there other additions or edits to consider for the Guidelines?
2. **How should a Civic Data Trust** with the broad authority we propose be established? Can it be established by contract?
Can it be achieved through standards imposed by Waterfront Toronto? Or does it require legislation?
3. **What should the structure**, staffing, and, if pertinent, board composition of the Civic Data Trust look like?
4. **Should the Civic Data Trust** act as a repository for data? Is this necessary, and what are the upsides and challenges attendant to that responsibility?
5. **What will be involved** in getting the Civic Data Trust up and running, and how will this be funded? How will ongoing operations of the Civic Data Trust be funded? Should the Civic Data Trust have the authority to charge for access to certain kinds of data? How would that relate to the goal of making data freely and publicly accessible?
6. **Should the Trust** carry liability related to the improper collection or use of data under its jurisdiction?
7. **Are the typologies of Urban Data** well-crafted and have we drawn the lines between self-certification and substantive review in the right places?
8. **What are the mechanisms** and who will be responsible for enforcement?
9. **How can we best encourage** use of open standards?

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Summary of Digital and Data-related Proposals in the Master Innovation and Development Plan for Quayside

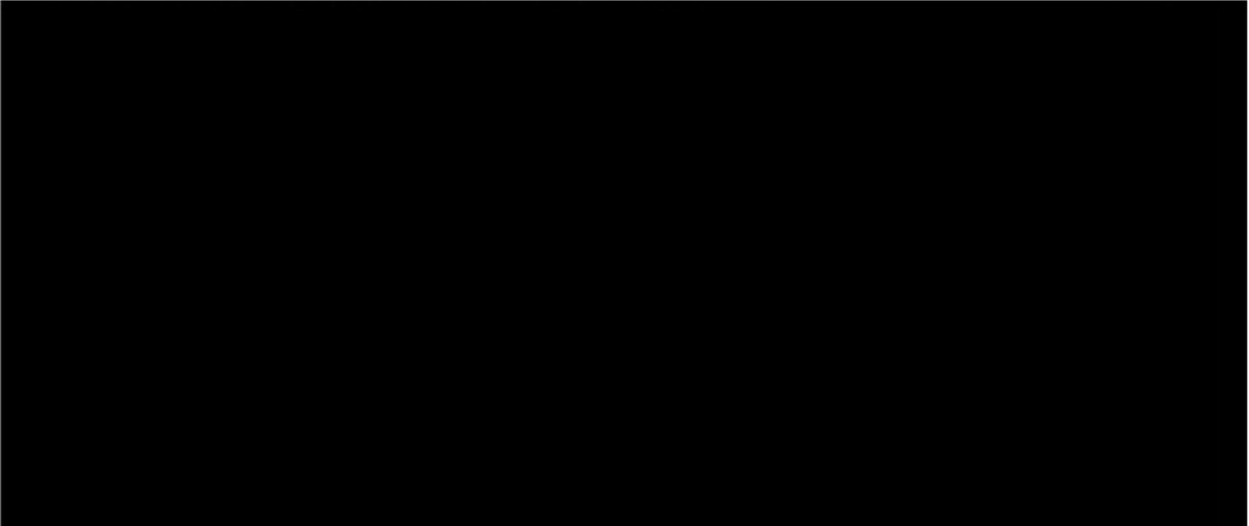
Overview

- One objective articulated in the original Request for Proposals for the Quayside project was to “realize the benefits of emerging technologies...to support data-informed decision-making for residents, visitors, investors, employers, and service providers”. (RFP p8)
- Chapter 5 of Volume 2 is dedicated to a range of digital and data proposals that seek to “catalyze digital innovations that help tackle urban challenges and establish a new standard for the responsible collection and use of data in cities”. (Volume 2, p. 376)
- A key element would be the widespread **collection of “urban data”¹** within the IDEA District (Quayside + the proposed wider geography) that would, according to the MIDP, lead to powerful insights that could transform urban planning policy, from building design to enabling new approaches to energy use regulation.
- An “ecosystem of urban innovation” would include, for example, shared digital infrastructure, an open and secure approach to architecture and standards, a set of digital services and applications (some provided by Sidewalk), and a trusted process for responsible data use. See schematic in **Annex A**. (Volume 3, p. 380).
- Noting that federal and provincial privacy commissioners would continue to oversee all privacy laws, the MIDP proposes to **create an independent data trust** that would establish Responsible Data Use (RDU) guidelines for urban data **collected** in the IDEA District. The data trust would manage a 4-step process for approving the **responsible collection and use of urban data**, based on assessments intended to extend beyond the traditional Privacy Impact Assessment. Personal data collected through commercial activities (“transaction data”) would not be subject to the trust.
- The data trust would act as the independent steward/manager of data and digital infrastructure based on a charter to ensure beneficial collection of data and protection of privacy. It would ensure that value from data is returned to people, communities, government, industry and the society from where it is collected.
- According to the MIDP, the data trust’s Chief Data Officer’s decisions would be made to ensure all actors in the IDEA District **comply with applicable privacy laws, including PIPEDA**. The Chief Data Officer and a board overseeing the data trust would also develop protocols on when and how data could be stored outside of Canada.

¹ Sidewalk defines “urban data” as information gathered in the city’s physical environment, including the public realm, publicly accessible spaces and even some private buildings. (Volume 2, p. 379)

- The MIDP proposes sharing some **Intellectual Property** benefits of the project more broadly (e.g. a “patent pledge” permitting access in Canada to new patented technologies, sharing profits arising from commercialization of some new patented technologies with governments).

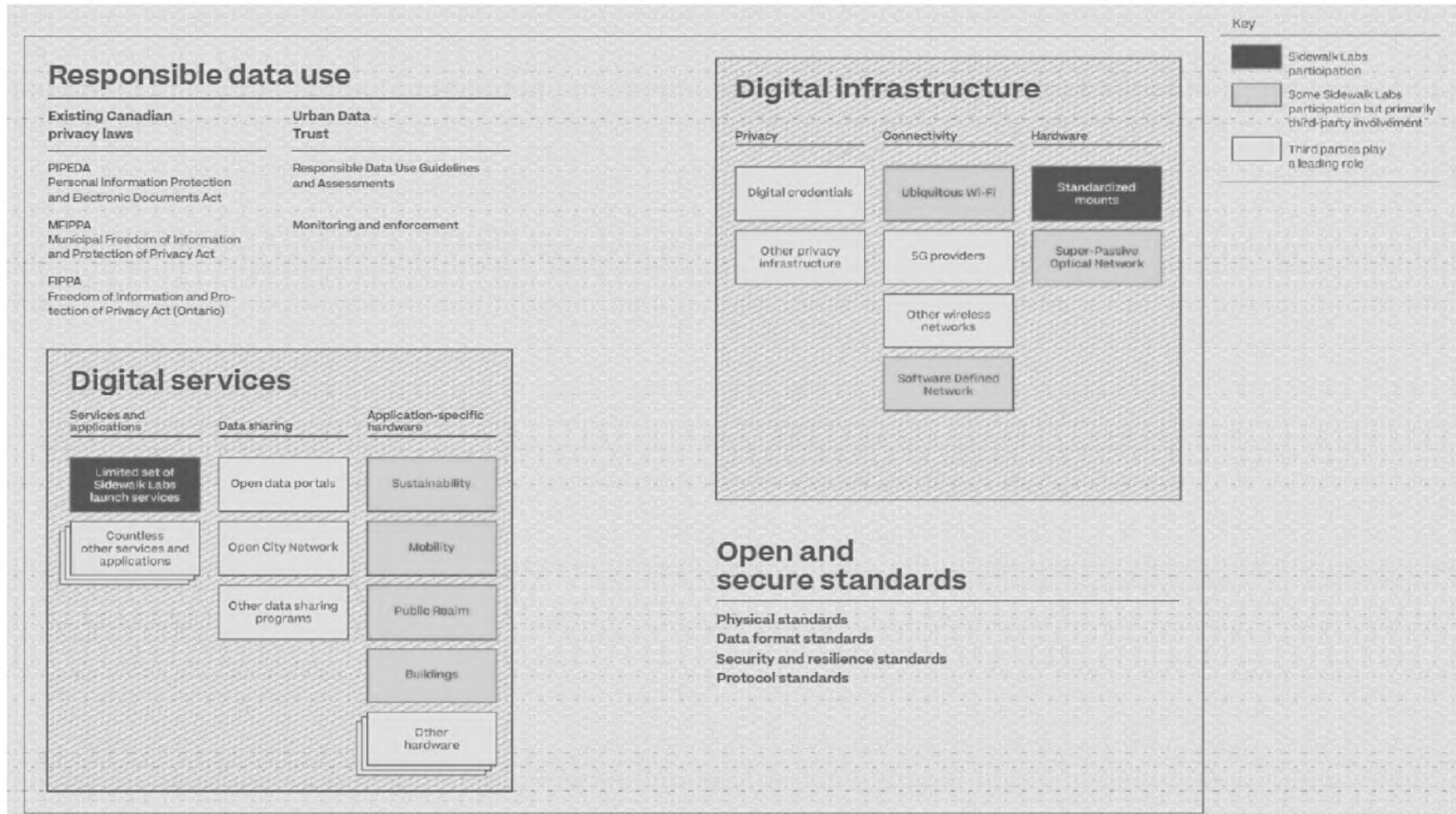
Considerations

- Canada has a strong foundation of privacy laws around personal information, and recognizes privacy as a fundamental human right. [REDACTED]
- 

Next Steps

- **July 15th to end July:** Waterfront to launch series of public and stakeholder consultations on the draft MIDP, including public meetings and an online feedback tool. A second round of engagement after Labour Day is also being contemplated
- **August 1-31:** Waterfront and expert panel initial review and return to Sidewalk on critical issues based on consultation feedback
- **September/October 2019:** Sidewalk submits final MIDP to Waterfront
- **Fall 2019:** formal evaluation by Waterfront and development of management report and recommendations for consideration first by the Investment, Real Estate and Quayside (IREQ) sub-committee and then by the full Board
- **December 2019 or early 2020:** Board decision on MIDP endorsement
- **Winter 2020:** commence development of Implementation Agreements based on any approved elements of the MIDP

Annex A:
Sidewalk's role in creating core conditions for digital innovation (Volume 2, p. 380)



Digital Innovation & Data Governance

MASTER INNOVATION AND DEVELOPMENT PLAN BRIEFING
FOR ASSISTANT DEPUTY MINISTERS

ALYSSA HARVEY DAWSON | CRAIG NEVILL-MANNING | MARCH 5, 2019

Outline of this presentation

We'd like to give you an overview of the Digital Innovation & Data Governance chapter of the Master Innovation and Development Plan.

Because we're discussing this out of the context of the earlier chapters that focus on quality of life goals, we will briefly summarize some of these goals.

We will also describe one set of technologies designed to improve mobility, in order to motivate the technologies and processes we are proposing.

Outline of this presentation

Current draft chapter outline:

1. More Affordable and Flexible Digital Infrastructure
Ubiquitous connectivity, "urban USB port", distributed credentials
2. Data Standards That Are Open and Secure
Data formats, APIs, open access, open source interfaces, resiliency, security, data residency
3. Creating a Trusted Process for Responsible Data Use
Urban Data Collective, Responsible Data Use Guidelines and Assessment
4. Core Digital Services That Others Can Build On
Systems to support management of mobility, outdoor comfort, flexible retail, public realm maintenance, open space use, mixed-use buildings, energy, building waste, stormwater

Principles

No tech for tech's sake

The goal of this project is not to develop digital technology or gather data – it's to improve quality of life in cities. We're not proposing any digital infrastructure or use of data that's not required to achieve quality-of-life goals.

Catalyze innovation by others

Anyone should be able to participate in creating any part of the neighbourhood's infrastructure, services and applications – and it should be significantly easier here compared to existing cities. No vendor lock-in – including for Sidewalk Labs.

Gather and use data responsibly

No data for data's sake: building on Privacy by Design, only gather data when it's required for quality-of-life goals. An independent Urban Data Collective should develop and implement guidelines and assessments for data gathering and use.

Push the envelope

As long as the principles above are satisfied, buy or build technology that will most significantly, safely and cost-effectively improve quality of life.

Quality-of-life goals

A MOBILITY system that is more convenient than the private automobile

SIDE WALK
LABS

Goals

Reduce congestion

Increase safety

Adapt to new forms of transport from self-driving cars to scooters

Personal Rapid Transit

Responsive Traffic Signals

Possible data required:

Location of streetcars

Current availability of curb space

Volume of pedestrians, cyclists, vehicles

How long do people have to wait to cross the street?

Real-time alerts to autonomous vehicles of pedestrians and cyclists around the corner



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For illustrative purposes

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Quality-of-life goals

A new standard of SUSTAINABILITY

SIDE WALK
LABS

Goals

75% per capita greenhouse gas reduction

Reducing building energy demands

Better management of stormwater

Extensive green infrastructure

80% waste diversion from landfills

Possible data required:

Energy use

Heating and cooling effectiveness

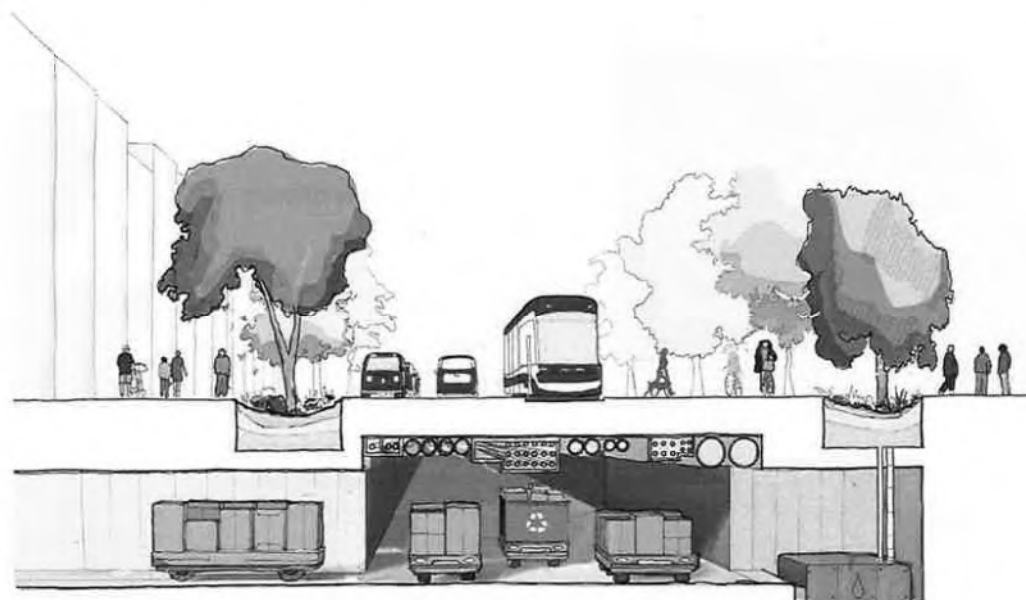
Water quality

Air Quality

Flow rates through stormwater, water and sewer pipes

Waste volume in public trash cans

Recycling rates



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6

Quality-of-life goals

A PUBLIC REALM that serves as the city's living room

SIDE WALK
LABS

Goals

Streets That Put People First

Mixed-Use Built Environment

Flexible Public Space, Retail,
Cultural and Community
Amenities

Outdoor comfort

Possible data required:

Which parks are used most
heavily?

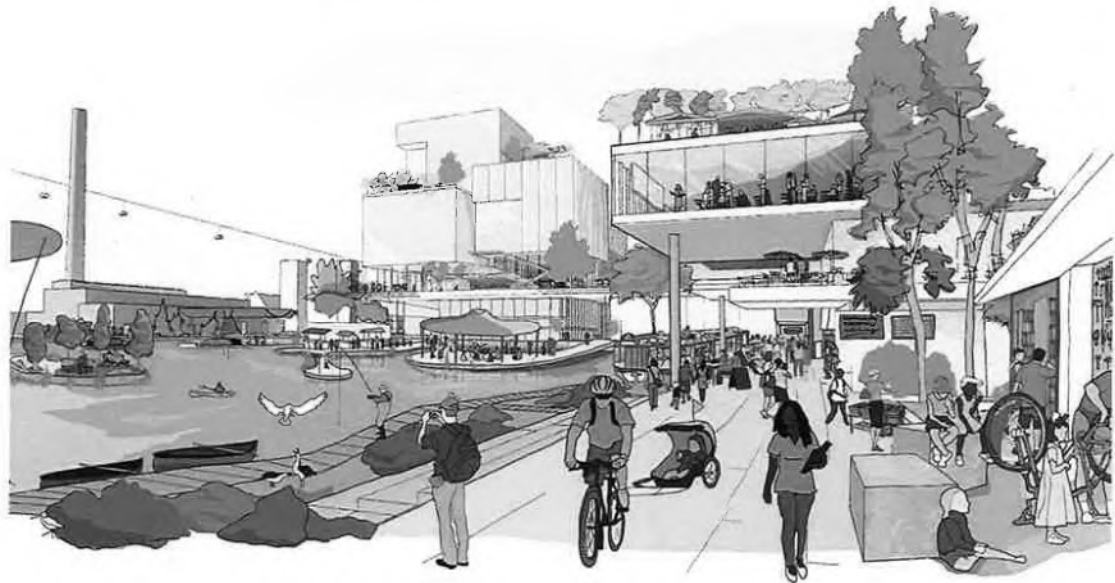
Which retail spaces are
available?

Which trash cans need to be
emptied?

Are there any tree limbs down
after a storm?

Hyperlocal weather

Decibel levels



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Quality-of-life goals

A BUILT ENVIRONMENT that is more usable, efficient and affordable

SIDE WALK
LABS

Goals

Enable mixed-use buildings

New construction methodologies that are cheaper and greener

Buildings that achieve energy use, climate, and other goals

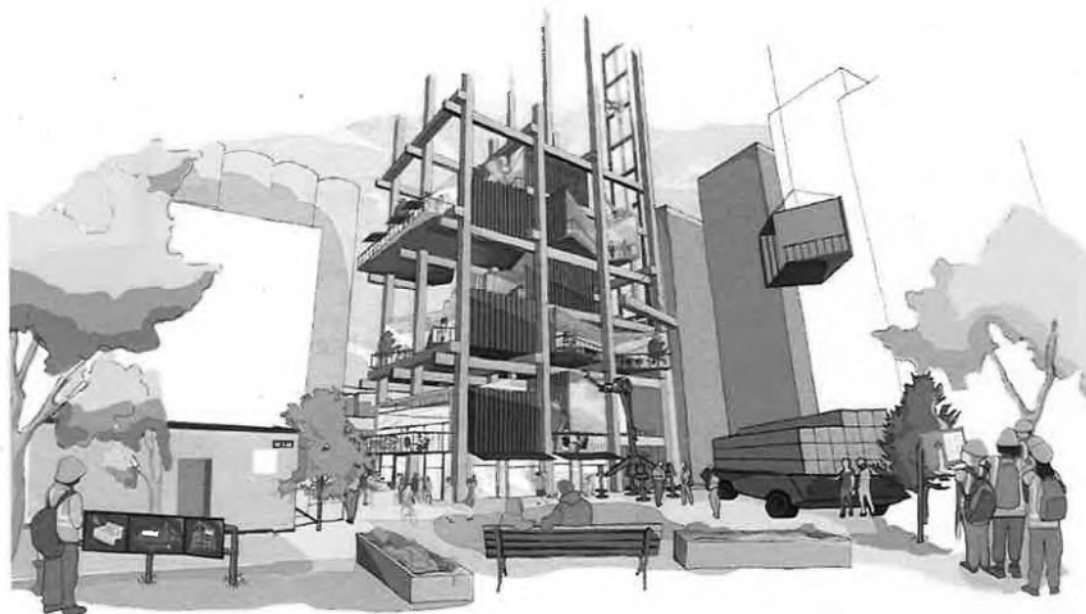
Possible data required:

Indoor air quality

Smoke sensors

Vibration, noise, odor sensors around light industrial uses

Water leak detection



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Mobility: Dynamic Curb


To motivate the digital infrastructure and data use, let's look in depth at one specific example.

Note, it's one example of many in our proposal – this is purely for the purposes of concreteness.

Quality of life goals

Reduce congestion, increase safety at curbs

SIDE WALK
LABS



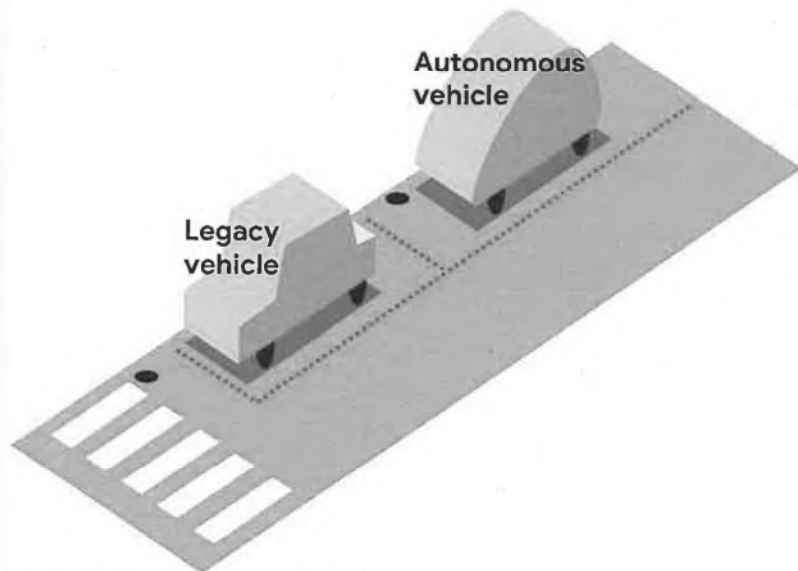
To alert drivers and autonomous vehicles to the current pricing and regulation of curb spaces, digital street signs display real-time cost and availability information.

To reduce the negative impacts of illegal double parking, licence plate readers will send data directly to the city for municipal enforcement.

To understand availability of curb spaces, in-pavement occupancy sensors detect presence of vehicles without identifying specific vehicles.

Page 17 of 54

Mobility: Dynamic Curb

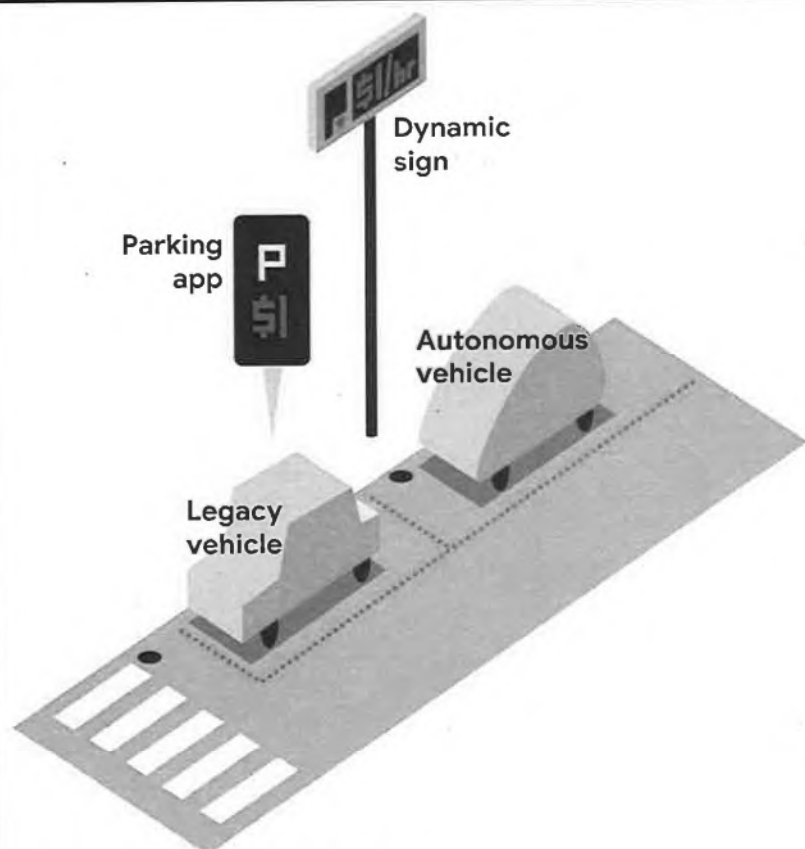


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Mobility: Dynamic Curb



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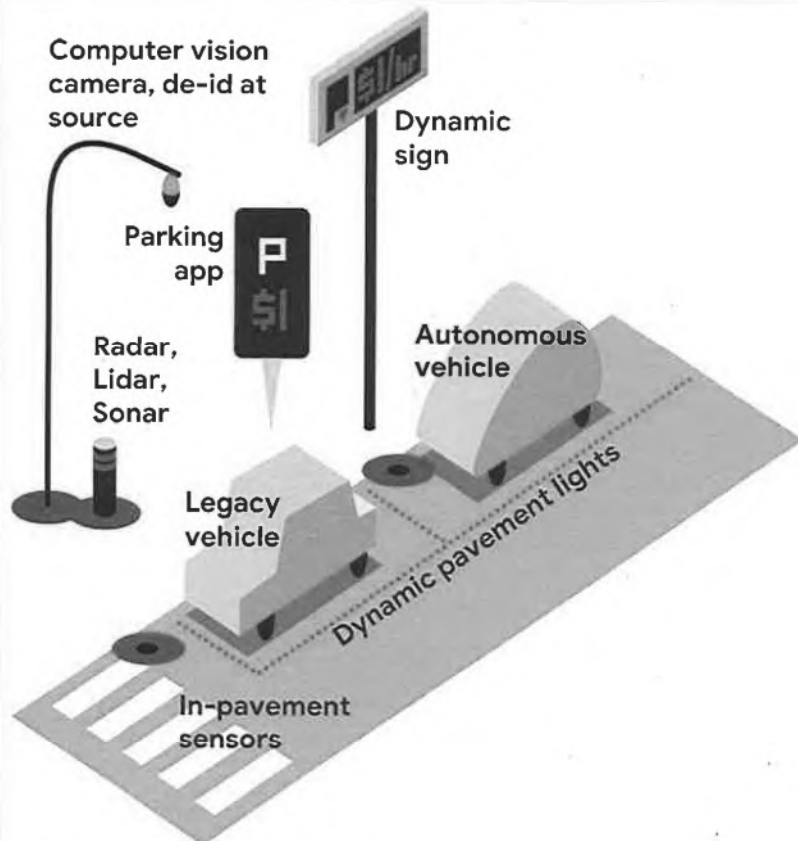
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Quality-of-life goals

Mobility: Dynamic Curb

SIDE WALK
LABS

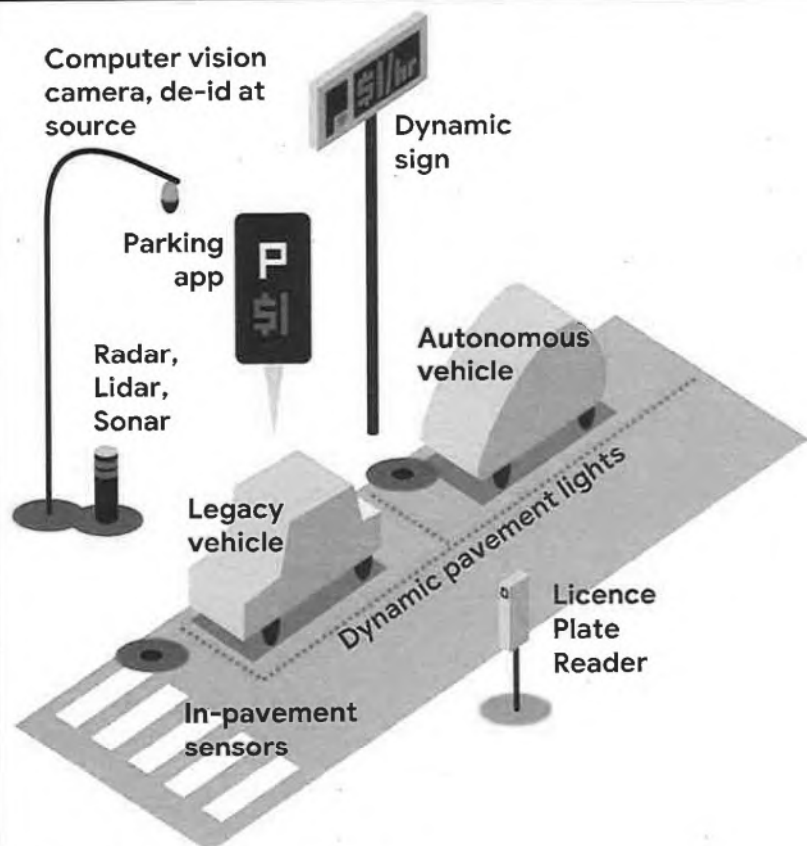


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Mobility: Dynamic Curb

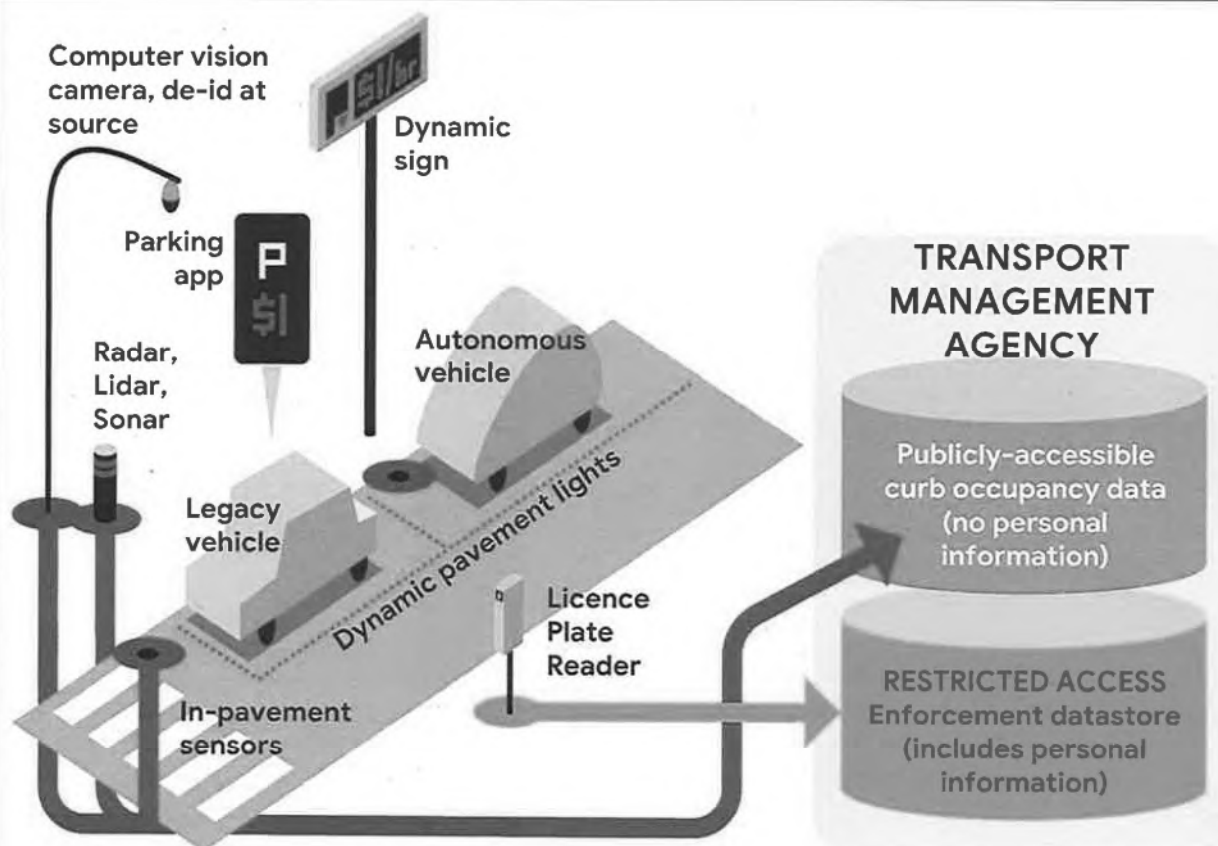


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Mobility: Dynamic Curb

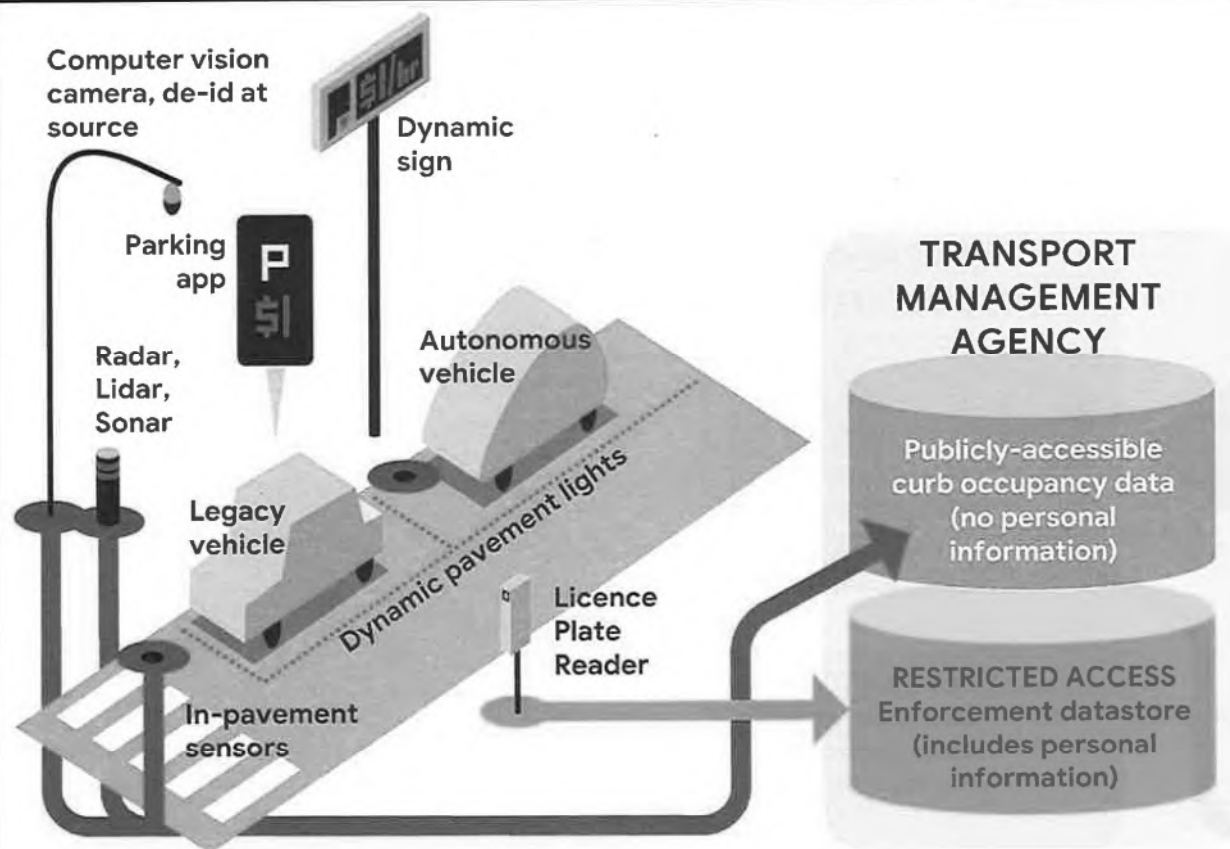


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Mobility: Dynamic Curb

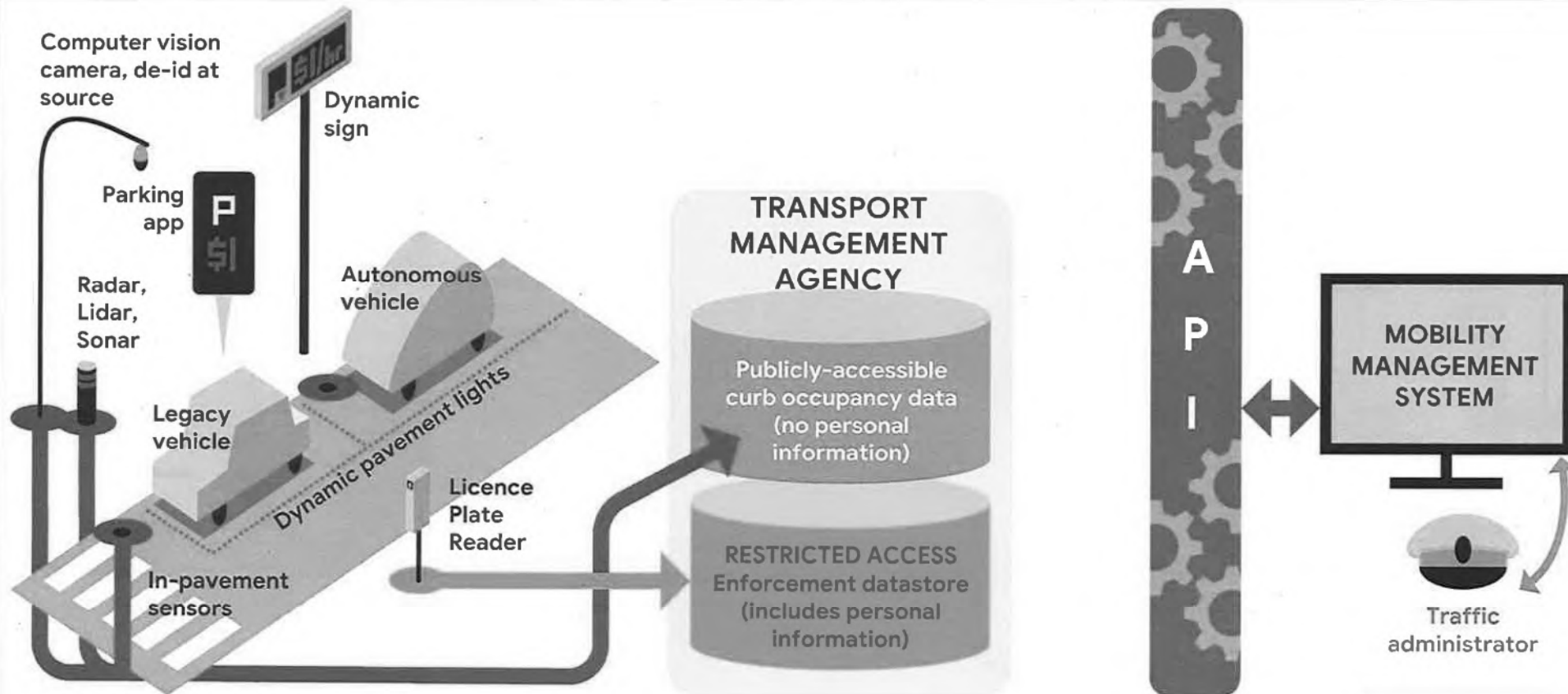


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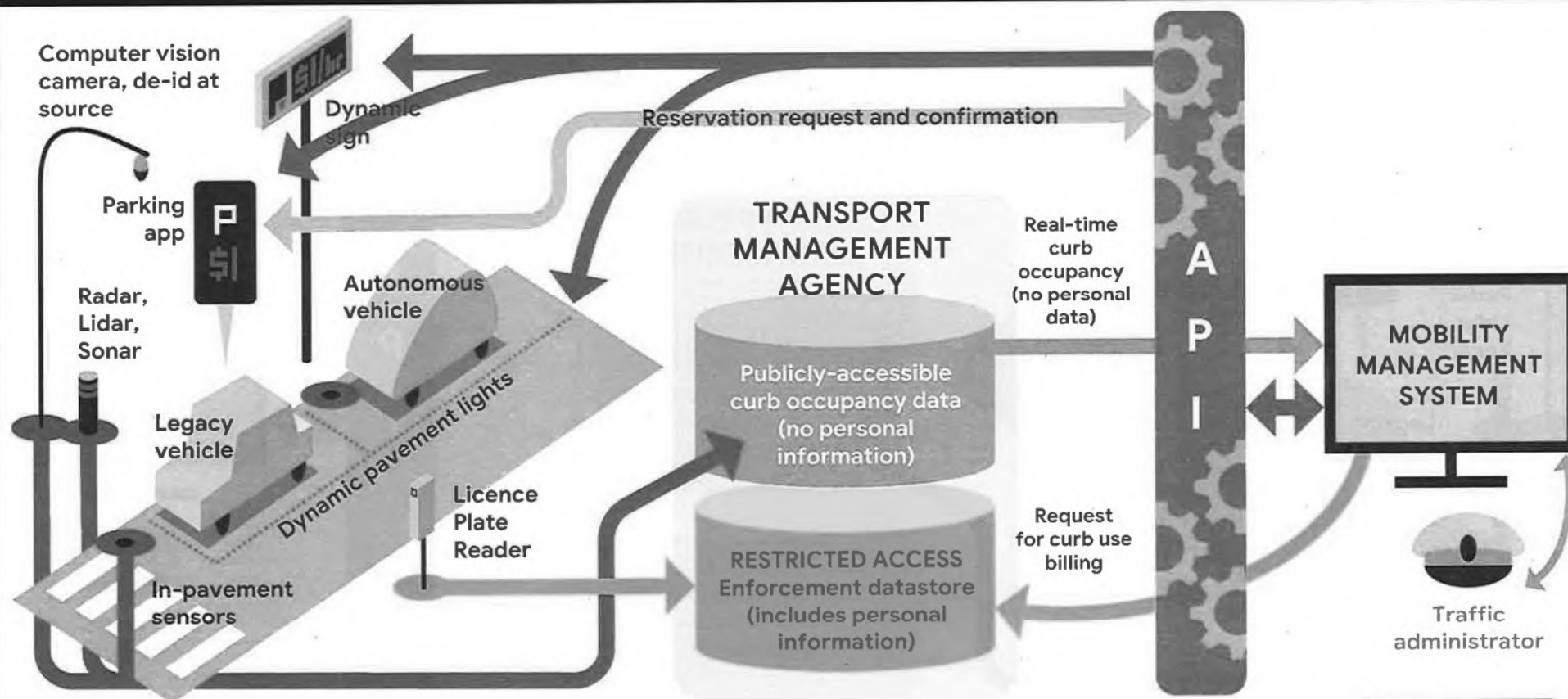
16

Mobility: Dynamic Curb



For illustrative purposes

Mobility: Dynamic Curb



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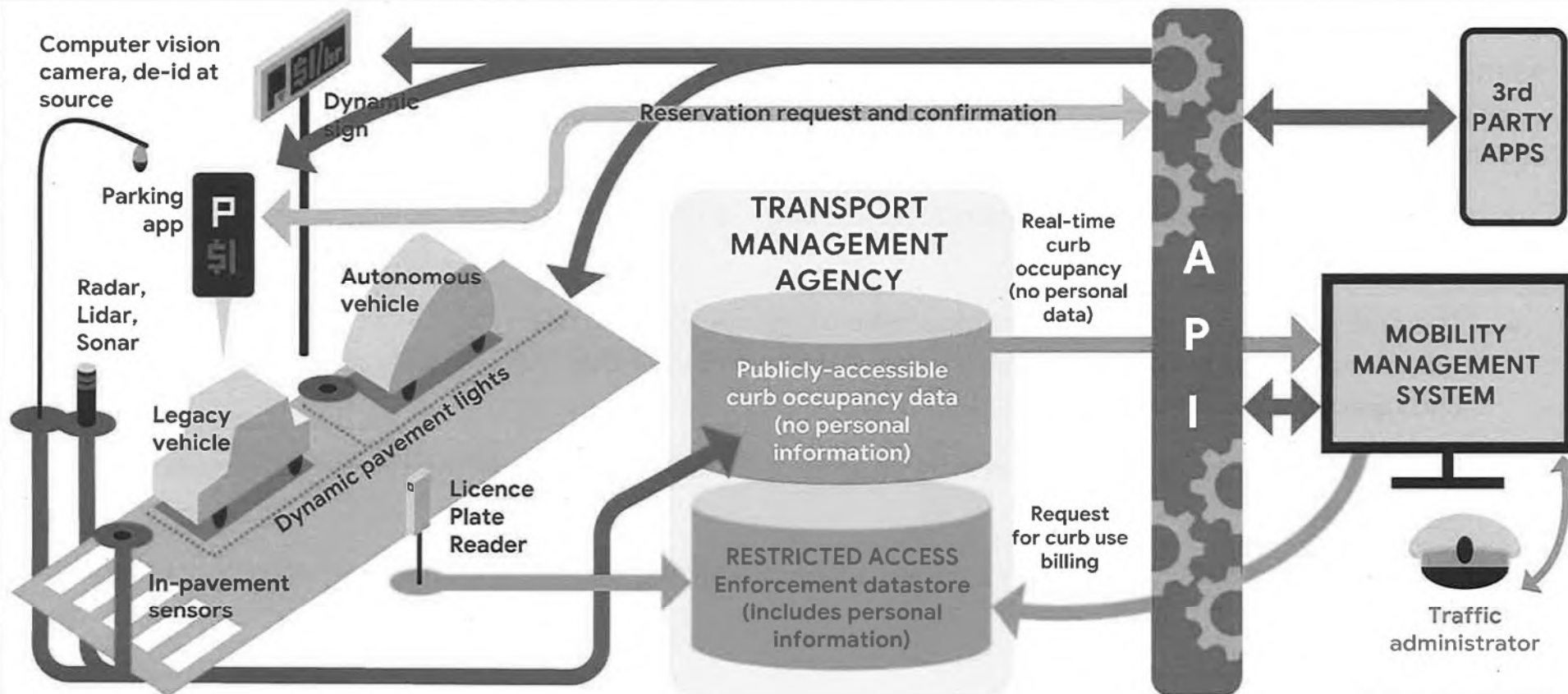
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Quality-of-life goals

Mobility: Dynamic Curb

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Further reducing data collection

As the state of the art in privacy techniques evolve, we believe that the interaction between the person or vehicle requesting curb space and the mobility management system could happen without any personal information.

- The requestor may not have to provide an identity — instead, they could provide a single-use number for this reservation.
- The mobility management system may issue a digitally-signed reservation — a so-called “zero-knowledge proof” — so that the requestor may prove that they have a valid reservation for the curb space without revealing their identity.
- Payment may be possible anonymously using similar techniques, rendering the entire transaction anonymous.

Our objective is always to improve quality of life while minimizing the amount of data — especially personal data — required.

Digital Innovation Chapter Outline

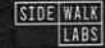


- 1. More Affordable and Flexible Digital Infrastructure**
- 2. Data Standards That Are Open and Secure**
- 3. A Trusted Process for Responsible Data Use**
- 4. Launching Core Digital Services That Others Can Build On**

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More Affordable and Flexible Digital Infrastructure



Ubiquitous connectivity

- Advanced optical network
- Flexible building connections
- Optimized wireless infrastructure
- A seamless and secure neighbourhood-wide network

Reduced installation and maintenance costs with an “urban USB port”

A distributed credential infrastructure to protect privacy

A Note on Ownership

**The first two sections address
fiber infrastructure and
network topology.**

We plan to work with existing
providers to introduce these new
technologies and build on the work
done to date by Waterfront Toronto.

As with all digital infrastructure,
residents and businesses
would not be required to
use these solutions.

01

Neighbourhood-
Scale Software-
Defined Network

02

Super Passive
Optical Network

03

Koala™
Standard Outdoor
Mounts with Power
& Connectivity

Challenges for Neighbourhood-Wide Connectivity

Deploying fiber, connections inside buildings, provisioning residential or business internet connections, and dealing with home routers is very expensive, and often insecure.

The technologies proposed hope to alleviate some of these problems.

Fiber Router



Fiber networks are difficult and expensive to upgrade as technology improves, and often aren't used efficiently.

Home Routers



Maintaining, updating, and debugging home networking equipment is technically challenging, and often falls to consumers

Security Risks



Home routers with default passwords and misconfigured firewalls create vulnerabilities.

Neighbourhood-Scale Software-Defined Network



Why

- ISPs provide firewalls, which provide imperfect security, while making it very difficult for subscribers to access devices in their homes and office when they're not there.
- Subscribers are currently required to manage their own Wi-Fi equipment, which is technically challenging, results in vulnerabilities, and often results in interference between apartments.
- Internet of Things devices are hard to deploy, and are often insecure.

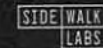
What

- Software-Defined Networks allow much more sophisticated, customized routing – for example, a private network for each subscriber including their home, school and office, regardless of their location.
- Will integrate with and support emerging 5G networks, as well as managed Wi-Fi access points to create seamless access with minimal interference.

How

- Internet of Things devices can be quarantined if they start exhibiting unusual behavior – trying to communicate with unknown internet endpoints, transmitting significantly more data than expected.
- Managed Wi-Fi significantly improves performance without requiring subscribers to be part-time network engineers.
 - Optimizing Wi-Fi systems with the layout of the city and buildings in mind can be done efficiently at scale.

Super Passive Optical Network (Super-PON)



Why

- Fiber infrastructure often carries a small number of wavelengths, leading to underutilization of physical infrastructure
- Upgrading the network requires new equipment at multiple points throughout the physical network increasing costs and making upgrades difficult.

What

- Many more wavelengths sharing a fiber, one wavelength per building
- Passive optical splitters at intermediate points
- Each building detects its wavelength only
 - Upgrades only require new equipment at endpoints, not at intermediate points in the network

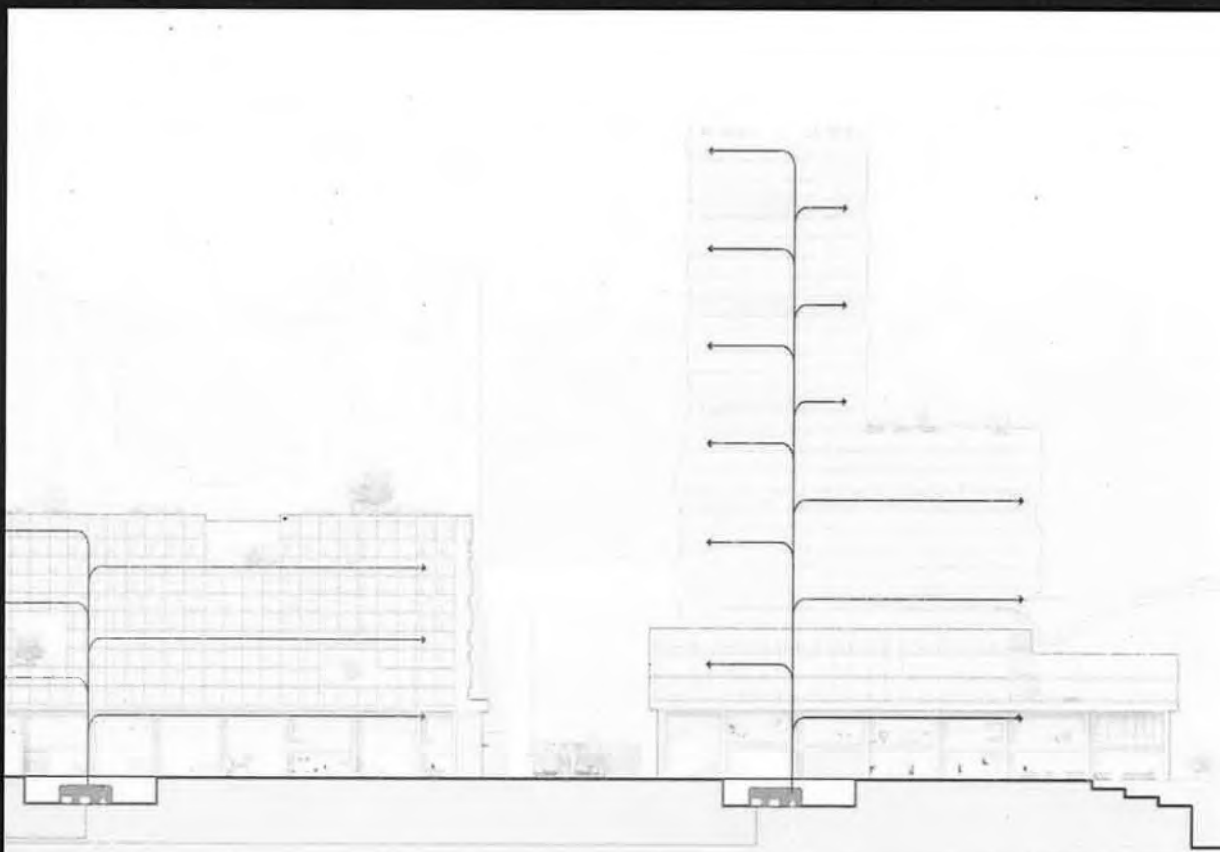
How

- New Super-PON approach, currently under consideration by IEEE 802.3 standards committee
- We plan to work with existing, local companies with experience in fiber deployment and service delivery.
 - We would provide specifications and technical expertise in this new approach

Super-PON

Each building gets a different wavelength of light. Allows for:

- Reduced cost through reduced infrastructure
 - Less fiber required
 - Fewer network point of presence buildings
 - Less active equipment at intermediate points
 - Reduced power: light is generated at the head end and passive all the way to the receiving end
- Higher bandwidth, despite reduced fiber requirements



Buildings — Proposing New Specifications for This Tech

Sidewalk Labs proposes that buildings conform to specifications that balance the goals of this Super-PON network with the ability for other providers to offer their own network services:

Points of Entry

Multiple point-of-entry locations

Conduits

Incoming conduits meet a set of specifications (e.g. buried depth, distance from water and sewer lines, coating materials, etc)

Meet-Me Room

A single location in the building where all telco-related equipment is installed with backup power and spare capacity.

Typical in commercial buildings, but less common in residential.

Risers

A vertical riser, dedicated to telecommunications wiring, accessible on each floor and designed for increased capacity

Cabling

Cat 6A wiring (or better) to every room for Power Over Ethernet wireless access points.

Koala: Standard Outdoor Mounts with Power & Connectivity



Why

- Mounting, maintaining, & upgrading signals and sensors is **expensive, disruptive and time consuming**
 - Avg cost per intersection for Adaptive Signal Control: \$20k-30k
- This leads to **slow adoption cycles** for new technology
- Example devices:
 - Lights
 - Wi-Fi access points
 - 5G cell base stations
 - Temperature, wind speed, humidity, rainfall sensors
 - Lidar, radar, other sensors collecting non-personal data

What

- **Flexible, standardized infrastructure** that can host many types of street digital infrastructure
- Similar in spirit to USB, but suitable for the demands of the public realm on street poles

To be clear, the Koala is simply a mount and connector, **not a device that collects urban data.**

How

- **Current prototype** (subject to change):
 - Hermetically sealed package
 - 200 Watts
 - **6 gigabits per second** of data through short-range wireless or wired connection,
 - Mechanical mount that is **installable and removable by ground-based operators** with special poles (and in the future, possibly by drone)

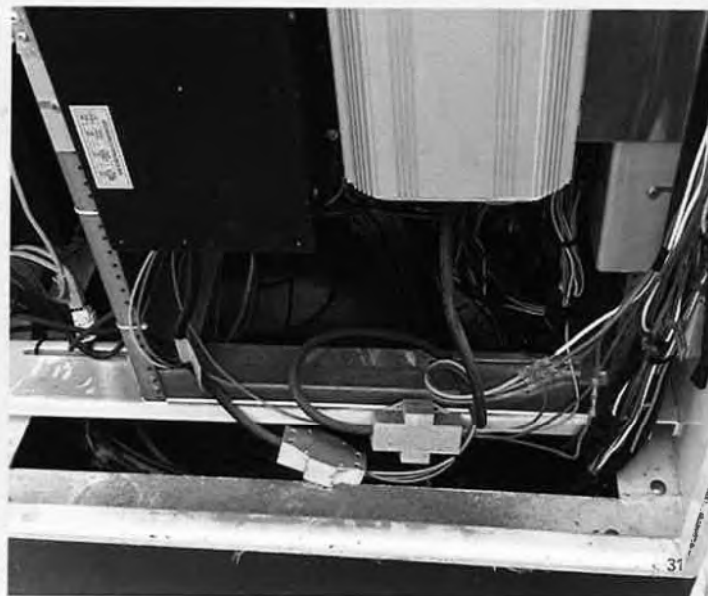
More Affordable and Flexible Digital Infrastructure

Current Approach



More Affordable and Flexible Digital Infrastructure

Current Approach



More Affordable and Flexible Digital Infrastructure

City of the Future?

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Koala – General Requirements

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01

Mechanical Security & Ease of Installation / Removal

Infrastructure should be easy to install and maintain: able to be mounted or swapped out within minutes by human operators without large equipment or street closures.

It should also be robust to wind, dust, precipitation, temperature variations and other challenges of the urban environment.

02

Power

Client devices inevitably need power. Some devices, like displays and lighting, may require more than 100 watts of wired power.

Other devices, like air quality sensors, could possibly be powered through solar panels.

03

Connectivity

Most client devices will need to send and receive data. In locations like Quayside with high-quality, reliable wireless connectivity, most devices might not need hard-wired data connections.

If this system used for 5G antennas, a wired connection will be required.



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More Affordable and Flexible Digital Infrastructure

What Else Does Koala Provide?

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01

Security

Physical device authentication and data encryption

02

Civic Data Trust Control

Ability for Civic Data Trust to turn off network or power for devices out of compliance with Civic Data Trust requirements.

03

Ecosystem Development

Standardization and reduction of cost and disruption creates the conditions for a thriving ecosystem of urban technology creators, such as startups, researchers, or established companies.



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More Affordable and Flexible Digital Infrastructure

Using Koala Will Not Be a Requirement

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Devices will not be required to use Koala, but we hope that the cost reduction and ease of use make them an attractive option

Koala will be a standard, similar to USB

Device adoption will determine the standard's success



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Digital Innovation Chapter Outline



- 1. More Affordable and Flexible Digital Infrastructure**
- 2. Data Standards That Are Open and Secure**
- 3. A Trusted Process for Responsible Data Use**
- 4. Launching Core Digital Services That Others Can Build On**

Sidewalk Labs' Vision: Catalyze Digital Innovation



The ability to create the conditions for digital innovation is at the heart of Sidewalk Labs' vision for the city of the future. Digital innovation is the basis for many of the core planning initiatives that Sidewalk Labs will propose throughout the Master Innovation and Development Plan to improve mobility, affordability, sustainability, and economic opportunity. It is also essential for catalyzing an ecosystem of new services and solutions by Canadian companies, local Toronto entrepreneurs, and other third parties from around the world.

How we plan to get there

- Provide Affordable and Flexible Digital Infrastructure
- Set Data Standards That Are Open But Secure
- Create a Trusted Process for Responsible Data Use
- Launch Core Digital Services

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Connectivity

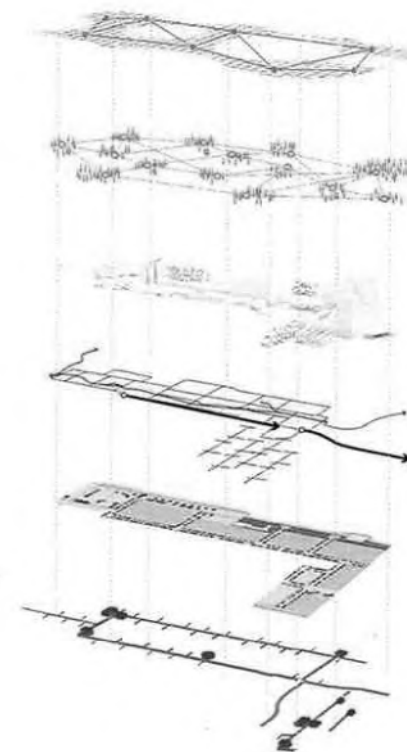
Social Infrastructure

Buildings

Mobility

Public Realm

Infrastructure



Data Standards That Are Open and Secure

Sidewalk Labs' Vision: Catalyze Digital Innovation



Designing technology to support our quality of life goals has revealed patterns: common pieces of infrastructure and specific services that are required to bootstrap digital innovation in the neighbourhood for Sidewalk Labs and others.

WHAT SIDEWALK LABS WILL BUILD

Taking the same approach to designing solutions for **sustainability, flexible public realm, community, buildings, accessibility**, etc. leads us to believe that we should create a new standard for digital infrastructure and services in cities, including:

- Ubiquitous connectivity
- Standardized mounts and power
- A high-resolution 3D map of the neighbourhood
- An open data hub which will provide real-time access to data in standard formats through well-documented interfaces

The fact that Sidewalk Labs is committing to build these components does not preclude others from deploying technology that improves on, competes with, or replaces them.

WHAT OTHERS WILL BUILD

The lion's share of technologies that make Quayside unique will be developed and deployed by an ecosystem of many innovators:

- Just as in the World Wide Web, multiple providers can coexist, and technological solutions can integrate, as long as they agree on standards
- Others should be welcome to provide better, different, cheaper infrastructure and services
- We hope that this will enable a wide range of Canadian startups to innovate more quickly, and use Quayside as a springboard to success
- All systems collecting or using Urban Data —whether created by Sidewalk or third parties—will be subject to Civic Data Trust governance

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Open architecture makes this possible

Sidewalk Labs will not create a centralized, monolithic platform. Rather, we will work with partners to create an open architecture—one that enables and encourages collaboration and experimentation.



In order for anyone to innovate, and have the opportunity to replace components that Sidewalk Labs and others build, there must be no proprietary lock-in. This requires:

- **Well-documented, standardized formats and interfaces**

- Any party will have the information required to build a replacement component for any urban system, or to create an entirely new application.

- **Easy access to public-domain data**

- Standards are worthless if it's not possible to get access to data. For example, devising a new optimization algorithm for traffic requires training and test data, so traffic volume data should be made broadly available.

- **Data portability**

- An existing system will likely have access to historical data provided to it by neighbourhood systems. This data should be able to be exported from the existing system so that new systems are not at a disadvantage for training and bootstrapping.
- This is similar to email systems that allow the user to export all of their historical email messages so that they can move to a new provider, eliminating lock-in.

Data Standards That Are Open and Secure

Example of an Open System: The World Wide Web

SIDEWALK
LABS

If urban technology used open standards in the same way that the World Wide Web does, innovation would explode, and the risk of vendor lock-in would be dramatically reduced.

You can use any browser...



to visit any web page...



served by any web server.



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Data Standards That Are Open and Secure

Example: World Wide Web Standards

Standards enable innovation and competition.

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Formatting

Hypertext Markup Language (HTML),
Cascading Style Sheets (CSS)

Images

Portable Network Graphics (PNG),
Joint Photographic Experts Group (JPG)

Interactivity

JavaScript

Communication

HyperText Transfer Protocol (HTTP)

Security

Secure Sockets Layer (SSL)

Anyone can build a web browser

as long as it implements standards like HTML, CSS, JavaScript, HTML and SSL. The most popular browsers are free, and their cores are open source.

Likewise, anyone can build a web

server as long as they implement HTTP, SSL, etc. The most popular servers are free and open source.

With partners, we hope to significantly advance a competitive, innovative urban technology ecosystem by using, developing, and promulgating standards.



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Published Standards



At the core of Sidewalk Labs' approach to catalyze innovation is the belief in the importance of published standards for digital hardware and software.

Sidewalk Labs has a three-part plan to achieve its goal of an open city

- First, it proposes to provide data in standard formats, and via well-defined, public application programming interfaces (open architecture). Where relevant standards do not exist, it proposes to work with other companies, researchers and standards bodies to create those standards.
- Second, it proposes to make this data publicly accessible by default (open access).
- Third, it proposes that the software source code required for others to integrate with each of these systems be made publicly available under a free software license (open source).



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Digital Innovation Chapter Outline

- 1. More Affordable and Flexible Digital Infrastructure**
- 2. Data Standards That Are Open and Secure**
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- 4. Launching Core Digital Services That Others Can Build On**

Responsible Data Use

Alyssa Harvey Dawson,
Sidewalk Labs - GC and Head of Data Governance

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Sidewalk Labs' Vision: Digital Governance Framework



Urban Data Collective and Urban Data



Responsible Data Use Assessment



Responsible Data Use Guidelines



Published Standards



A New Global Model for the Collection and Use of Urban Data

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.

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Urban Data



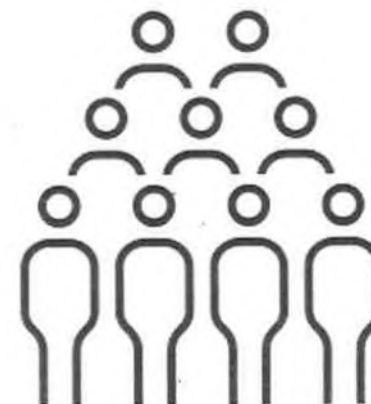
What we heard

- Protect more data, not just Personal Information.
- Data use also impacts groups of people and communities.

How we responded

Torontonians want more data to be protected, so we are using a different term to apply to data collected in physical or common spaces, which includes “Personal Information” and information that is not connected to a particular individual.

Sidewalk Labs proposes to call this type of data “Urban Data”.



Urban Data



Urban data merits special focus because:

- The lack of transparency about sensors in the public realm causes a feeling of being surveilled and challenges whether consent is meaningful.
- The collection and use of personal and non-personal information impacts groups of people or the community.
- It is collected in a physical space in the city. Geography is one characteristic that, in combination with other considerations, make it stand out as worthy of additional responsible data use guidelines.
- Some types of Urban Data can reasonably be considered a public asset and should be made publicly accessible by default.

“Urban Data” is Personal Information, de-identified data, non-personal data, and aggregated data collected and used in **physical** or **community spaces** in the project area.

“Transactional Data” is a term we use to refer to data that comes from consent-based relationships between organizations and individuals (examples include data from apps, website, credit card transactions). Incorporating additional requirements on this type of data in connection with the project is not as feasible due to its transitory nature.

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Urban Data Collective



What we heard

- In addition to personal and collective privacy, Torontonians are concerned with the ownership and stewardship of urban data.
- Urban Data is often considered a collective or community asset.
- Guidelines should be applied and enforced consistently to gain trust.

How we responded

Sidewalk Labs proposes that an independent entity - the **Urban Data Collective** - manage urban data and make it publicly accessible by default. Because of the novelty and complexity of this, we suggest that the Urban Data Collective be **implemented in two phases** - one focused on getting the body up and running quickly and the other on a more long-term solution.

Urban Data Collective: Initial Implementation



Sidewalk Labs proposes that the final agreement between Waterfront Toronto and Sidewalk Labs call for **the creation of an independent, non-profit entity, the Urban Data Collective, as the digital governing body** for the Sidewalk Toronto project.

The UDC would enter into Data Sharing/Use Agreements with organizations, with terms governing the collection, storage, security, etc. of Urban Data. A breach of these terms would be actionable in court.

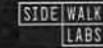
The agreement would:

- Require organizations seeking to collect or use Urban Data in the project area to apply to the UDC for approval;
- Authorize the creation of the Urban Data Collective entity

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Urban Data Board



The Urban Data Board would initially include a data governance/privacy/IP expert, a community representative, a public sector representative, an academic representative and a Canadian business industry representative.

The Board would hire a **Chief Data Officer**, who would be responsible for:

- Developing the Charter for the Urban Data Collective;
- Promulgating “Responsible Data Use Guidelines” that respect existing privacy laws but also apply new standards for collecting and using Urban Data;
- Structuring oversight and review processes;
- Determining how the collective will be staffed, operated, and funded; and
- Coordinating, as necessary, with privacy regulators and other key stakeholders.

The Urban Data Board could fundamentally operate in ways similar to Internal Review Boards or Research Ethics Boards in academic institutions for research or content moderation boards set up in-house at social media companies.

Urban Data Collective



Funding

Sidewalk Labs proposes that each party that wants to collect and use data in the designated geography pay a **data collection and use administration fee** to cover the costs of the Urban Data Collective. These costs could include salaries for the Chief Data Officer, staff to manage the applications, reviews, audit and enforcement, and other customary expenses for the Urban Data Board.

Longer Term Options

After a period of time, we could envision that the UDC be transformed into a public-sector agency or a quasi-public agency.

Open Questions

- What are the pros and cons of each of these approaches?
- What would be the best way for the UDC to work with privacy regulators?

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Responsible Data Use Guidelines



What we heard

- Sidewalk Labs should not have an advantage in the development of urban innovations.
- Concerns about data collection and use go beyond privacy laws and must also consider other concerns such as data stewardship, access to data, security, data ethics and responsible AI.

How we responded

The RDU Guidelines go beyond privacy to address key areas of digital governance, ethics, open access to information, as well as the ways in which aggregate or de-identified data can impact individuals and groups of people, including through the use of advanced analytics, such as artificial intelligence.



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Responsible Data Use Guidelines



Beneficial purpose. All projects must apply Canadian values of diversity, inclusion, and privacy as a fundamental human right. To do this, there must be a clear purpose and value to any proposed use of urban data, and a direct tie to the ways in which the project and proposed data collection activity are benefiting individuals or the community.

Publicly accessible by default. Organizations should make the de-identified or non-personal data that they have collected publicly accessible to third parties by default.

Transparency and explainability. Organizations should inform individuals of how and why their information is being collected and used, and do so in a way that is proactive, clear, and easy to understand.

Responsible AI. Organizations should develop algorithms according to principles that include fairness, accountability, inclusiveness, and reduce bias.

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Responsible Data Use Guidelines



Data minimization, security, and de-identification by default. Organizations should collect the minimum amount of data needed to achieve the beneficial purpose and should seek to use up-to-date de-identification techniques to reduce the personal information that they collect and use.

No selling or advertising without explicit consent. While there will not be prohibitions placed on data collectors who would like to sell data containing personal information or use such data for advertising, a higher level of scrutiny should be placed on projects that want to use personal information for these purposes. Sidewalk Labs has already committed publicly that it will not sell personal information to third parties, or use it for advertising purposes. It also commits to not share personal information with third parties, including other Alphabet companies, without explicit consent.

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Responsible Data Use Assessment



The RDUA is a tool used to incorporate Privacy by Design, and examine other issues around data use, stewardship, security, and access.

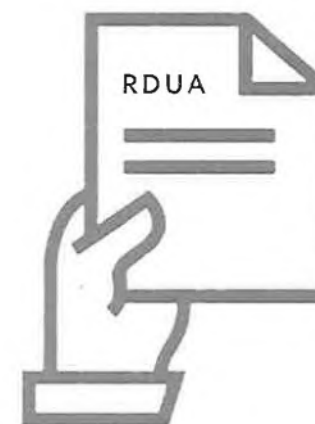
Sidewalk Labs proposes that the RDUA be submitted to the Urban Data Collective for any product, pilot, or project that wants to collect or use Urban Data.

The UDC would use the RDUA to assess how the proposal conforms to the RDU Guidelines, including applicable privacy laws.

Sidewalk Labs has been developing this assessment tool internally with input from advisors and experts and has been using it to assess its pilot projects.

The RDUA is comprised of four sections:

1. Purpose
2. Data Sources and technology
3. Legal compliance
4. Risk-Benefit analysis



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Responsible Data Use Assessment: 1. Purpose



Purpose. The first section of the RDUAs asks for a description of the purpose of the project, service, or product, including its objectives and goals, as well as the urban challenges it hopes to address. Some examples of questions that might be asked in this part of the RDUAs include:

- What is the objective for this project? Clearly state the problem that is being solved.
- Clearly state the measurable goal or outcome of the project.
- How likely is the proposed technology and collection/use of data to solve the problem as described?
- What are the alternatives to the technology or method of collection? Why are they not sufficient?

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Responsible Data Use Assessment: 2. Data sources and technology

Data sources and technology. The second section of the RDUa requires a description of the technology or data-collection methods, the data sources or types, and the parties who have access to the data. Some of the questions asked in this section include:

- What are all the sources of the data, internal and external?
- Does the data activity involve personal information?
- Does this project involve the collection or use of data about people?
- Is the data observed (created as the result of individuals or activities being observed and recorded)?
- Is the data stored in Canada? If not, is there a reason beyond business case/financial considerations that the data would not be stored in Canada?
- Who are all the possible stakeholders and parties involved or related to the data activity? What are their interests and potential concerns?
- Is the data, or a subset of data, going to be used for advertising purposes?
- Is the data going to be sold to third parties?

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Responsible Data Use Assessment: 3. Legal compliance



Legal compliance. The third section of the RDUa captures conformance to applicable privacy laws.

Examples of questions asked in this section include:

- Describe how the data activity complies with applicable Canadian privacy laws.
- If the data activity involves personal information, there must be explicit, express consent for collections, uses, or disclosures that: (i) involve sensitive information; (ii) are outside the reasonable expectations of the individual; and/or (iii) create a meaningful residual risk of significant harm. Please explain how you have achieved this requirement.
- Does the data activity include mechanisms that explain how data is used, how benefits and risks to individuals are associated with the processing, and how individuals may participate and object where appropriate?
- Describe the notice, consent and control provided to the user.
- If the data activity includes personal information, how has it been de-identified? If it has not been de-identified, what is the beneficial purpose for keeping the data identifiable?
- Is there a less privacy invasive data intensive way to achieve the goals of the data activity (including potential insights)?

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Responsible Data Use Assessment: 4. Sections



Risk-Benefit analysis. The fourth section of the RDUAs asks the proposing entity to detail and rate the risks and benefits associated with the project and data collection activity, and how any risks have been mitigated.

Example questions might include:

- Could the anticipated use of technology harm or benefit certain individuals, groups of people, or communities in unintended or unexpected ways?
- What are the benefits to the individual or groups of individuals?
What are the impacts to the community of this data collection activity?
- Could the anticipated use of the data create a risk of harm to the individual or group of individuals?
- How does the data activity treat groups equally and fairly?
- Are there differences between areas and communities that need to be taken into account when interpreting the data?
If so, how are those taken into account?
- Are you using analytical driven models, insights or algorithmic decision making, that could impact individuals?
- Is there a reasonable risk of harm to individuals or groups by releasing the data or the source code?
- How significant is the risk? How likely is the risk to be realized?

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Active Energy Management Use Example (Building Efficiency)



A private office building owner and operator wants to reduce energy consumption and emissions in one of its office buildings (Quayside 1) to test the feasibility of the initiative before bringing the same process to all of its buildings in Quayside.

The building owner will use the following methods of collection to collect and use the following data:

- Infrared motion sensors: occupancy data (aggregate data)
- Weather data from a third party and temperature data from the connected thermostats in the building (non-personal data)

The next slide is a brief illustration of how this proposed data activity could be reviewed, and depending on a balance of factors, including adherence to the RDU Guidelines, approved by the Urban Data Collective.

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Active Energy Management Use Example (Building Efficiency)



Step 1: Classify the Data

The building is located in Quayside and the information being collected in a space that could be considered a public environment or public asset. The data activity involves data about people. This data activity involves Urban Data.

Step 2: Submit a RDUa

The building owner must complete a RDUa and an application detailing where the sensors would be placed. The RDUa would include a description of the project, a description of the data sources and types, how the data activity conforms to applicable privacy laws, and a full analysis of the data activity's impacts, risks, and benefits.

Step 3: The Decision

The UDC's Chief Data Officer would review the RDUa and application and, using the RDU Guidelines and guidance from the board, make a decision on whether to approve the data activity with reasons why or why not.

Step 4: Post-Approval Conditions

To ensure transparency, if the data activity has been approved, a summary RDUa is published, the sensors are registered and placed on a digital publicly accessible map, and non-personal information is made publicly accessible.

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Digital Innovation Chapter Outline



- 1. More Affordable and Flexible Digital Infrastructure**
- 2. Data Standards That Are Open and Secure**
- 3. A Trusted Process for Responsible Data Use**
- 4. Launching Core Digital Services That Others Can Build On**

Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Mobility management system To reduce congestion and encourage shared trips, this proposed mobility management system would coordinate all travel modes, traffic signals, and street infrastructure, and apply demand-based pricing to curb and parking spaces.	Curb space availability (e.g., non-personal occupancy sensors) Pedestrian and cyclist detection and counts (e.g., non-personal lidar/radar) Vehicle detection, counts, speed (e.g., using a camera that does de-identification at source) <i>Restricted data (not published for privacy reasons):</i> Vehicle identification data, such as license plate or transponder id, collected on behalf of city parking enforcement	A startup could build a trip app that helps find the fastest or cheapest or greenest way from A to B. A policymaker could create more informed policy decisions around parking availability and transit service. A self-driving technology startup could improve its pedestrian-detection system. A researcher could detect pedestrian near misses and evaluate the performance of intersection designs on street safety. Employers could start programs that encourage workers to shift commute times to decrease congestion.	<i>(Names are illustrative only and do not imply partnerships or endorsement.)</i> <i>Self-driving vehicles:</i> Aptiv, Cruz, Uber, Lyft, Waymo <i>Sensor and traffic management:</i> Miovision, Brisk Synergies, P3Mobility, Leddartech, SMATS Traffic, Numina, RapidFlow, NoTraffic, Axilion, GRIDSMART <i>Parking:</i> Jrop, Passport, Sensys, All traffic, Pay by phone, Cloudpark, Curbway <i>Routing apps:</i> Google/Apple/Bing Maps, Waze, Transit App

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Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Outdoor comfort system A proposed system of outdoor-comfort tools, deployed in real-time, could dramatically increase the amount of time it is comfortable outside: building raincoats to block rain, awnings to provide shade, and fanshells to provide group cover.	Hyper-local temperature, humidity, wind speed, rainfall, and sunshine levels Raincoats and fanshell status	A retail startup could build an app that identifies the best locations or times for a pop-up store based on weather patterns. Health organizations could build apps that show residents a jogging route that avoids wind and snow and maximizes sun and interesting views. <i>These apps could also draw from the mobility sensors to avoid congested areas.</i>	<i>(Names are illustrative only and do not imply partnerships or endorsement.)</i> Weather data: Ambience Data, Earth Networks, IBM, The Climate Corporation People flow: Ecocounter, Numina, PeopleFlow

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Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Energy management system (Schedulers) This proposed system of Home, Office, and Building Operator Schedulers would automate energy use to optimize residential, commercial, and building heating, cooling, and electricity systems — reducing energy waste and relying on clean energy while increasing tenant comfort.	Outdoor weather; Aggregate and de-identified data on room temperature and humidity; Energy use by type (e.g., from plug loads, lighting, HVAC); motion or occupancy; ambient light; comfort levels / complaints. <i>Restricted data (not published for privacy reasons):</i> Individual measurement, data for the metrics above, e.g. timestamped data about particular plug loads, occupancy detection for particular rooms.	Energy researchers could use this data to compare neighborhood energy usage across a city. Architects and designers could use this information to improve building designs. Regulators could use such information to create a dynamic energy code system based on actual operators instead of design-based models. Climate organizations could create apps to help individuals or households gamify their energy savings (provided users consented to share their data).	<i>(Names are illustrative only and do not imply partnerships or endorsement.)</i> <i>Building Management Systems:</i> Automated Logic Controls, Johnson Controls, Schneider, Siemens. <i>Niche Building Analytics Providers</i> Basking Automation, Comfy, ElevenX, Encycle, Parity, Peak Power, Cortex, Raybased, Sensorsuite, Simptek, Shift Energy, Thoughtwire, Density.io, InnerSpace. <i>Energy use measurement:</i> Voltserver, Enertiv, Sense, Wemo, Currant. <i>Thermostats:</i> Ecobee, Honeywell, Nest, Samsung, <i>Smart switches, lighting, appliances, and other hardware:</i> Lutron, Enlighted, LG, TZO.

Draft for discussion purposes only

Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Building waste management systems To help divert landfill waste, a proposed program of responsive digital signage would help residents and businesses sort their trash, recyclables, and organics (foods) by illustrating common sorting mistakes. "Pay-as-you-throw" waste chutes would support this recycling program while helping to reduce overall waste.	Trash volume, pressure scales (weight), waste classification for sorting (e.g., using computer vision properly de-identified at source), contamination issues (i.e. coffee cups)	<p>An environmental researcher could team up with a fabrication studio to design a more sustainable coffee-cup lid based on disposal habits.</p> <p>City planners could use this information to understand best practices in buildings, to test new systems and strategies to scale to other buildings.</p> <p>Computer vision startups could use information on common recycling errors to design augmented reality apps that could help people classify waste.</p> <p>Environmental groups could design an app that provides feedback to consumers, both residential and commercial, encouraging higher recycling rates.</p>	<p><i>(Names are illustrative only and do not imply partnerships or endorsement.)</i></p> <p>Smart waste: AMP Robotics, Anaconda, CleanRobotics, Compology, Enevo, RTS Recycle Track Systems, Rubicon Global, Zerocycle.</p>

Draft for discussion purposes only

Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Active stormwater management A proposed active stormwater system would rely on green infrastructure and digital sensors to retain stormwater, reuse it for irrigation, and empty storage containers in advance of a storm to avoid combined sewer overflow.	Stormwater tank level, stormwater flow meter, total suspended solids, valve and gate status, underwater water-quality near shore.	<p>Environmental researchers could design an app to determine the amount of plantings and greenery needed to reduce stormwater flows and the need for secondary treatment.</p> <p>City planners could use this information to better plan (and minimize) hard infrastructure needs for stormwater, such as tanks and treatment facilities.</p> <p>Open data integrations could add this information to the measurement and publication of open stormwater data currently gathered by the city, adding new locations and more frequent updates.</p>	<p><i>(Names are illustrative only and do not imply partnerships or endorsement.)</i></p> <p>Digital management: Aquatic Informatics, IBM, Innovyze, Opti, Parjana, RainGrid, Suez, Veolia North America.</p> <p>Water quality: Acoubit, FREDsense, Orb, Xylem, ZwitterCo.</p>

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Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Flexible retail platform (SeedSpace) A proposed leasing platform called SeedSpace would help small businesses and other retailers book a wide range of ground floor space sizes, from anchor-tenant spaces to micro stalls, for short- or long-term uses.	Footfall and rate data (e.g. non-personal, aggregate lidar / radar), space size, availability, aggregated tenant turnover rates (aggregated and de-identified)	<p>A retail startup could create an app that determines the best times of the year or day for an entrepreneur to set up in the area. <i>This could also draw on hyperlocal weather data from the outdoor comfort system.</i></p> <p>An economic development firm could conduct (or have a startup create an app to conduct) retail industry analyses of neighbourhood turnover rates by size of space.</p> <p>Business Improvement Areas could use this data to understand the economic impact of events or policy decisions.</p>	<p><i>(Names are illustrative only and do not imply partnerships or endorsement.)</i></p> <p><i>Location mapping:</i> Innerspace, MappedIn</p> <p><i>Space mapping:</i> A Retail Space, Chatter Research, Potloc</p> <p><i>Space availability:</i> Booqd, Breather, Harbr, Piinpoint</p>

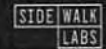
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Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
<p>Public realm maintenance map</p> <p>A proposed real-time map of public realm assets — from park benches to drinking fountains to landscaped gardens — would enable proactive maintenance and keep spaces in good condition.</p> <p>Draft for discussion purposes only</p>	<p>Evapotranspiration, plant health, moisture, waste bin volume</p> <p>Air quality, decibel meter (e.g. only volume level, not recording audio)</p> <p>Public realm asset location, usage, damage detection</p>	<p>Software developers could use this information to create automated maintenance services, such as precision agriculture systems or landscaping bots.</p> <p>Industrial manufacturers could use data on utility maintenance to identify more durable materials or component designs.</p> <p>City officials, business improvement districts, and others could use this information to better schedule core operations, such as waste collection or green-space watering, to lower costs and improve quality of life.</p> <p>A parks researcher could use this information to understand the average use of expensive equipment like kayaks to inform inventory procurement decisions.</p> <p>City planners could use this information to understand the use and benefits of new equipment pilots.</p>	<p><i>(Names are illustrative only and do not imply partnerships or endorsement.)</i></p> <p>Physical asset location: Bench Mark, BeWhere Inc., Estimote, Tekt.</p> <p>People flow: Eco-counter, Numina, PeopleFlow.</p> <p>Autonomous equipment: BigMow, Husqvarna, Kobi.</p> <p>Predictive maintenance: AI Incorporated, Arable, Mero Technologies, Nanophyll, Opti, Plantix, Sensoterra.</p>

Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Open space usage and management (CommonSpace) A proposed digital application called CommonSpace (created with the local organization Park People and the Gehl Institute) would make it substantially easier, faster, and less expensive to collect more reliable data on how people use public spaces — helping park operators better respond to community needs.	Gehl public realm activity categories, usage counts (aggregated and non-personal), demographic details (extremely high-level and thus non-personal)	<p>City planners, community groups, and others could use this information to research park spaces and equipment that show the highest use in different parks throughout the city.</p> <p>Community-based groups could develop planning apps and tools that allowed community members to better suggest park uses for all ages and abilities in their neighborhoods.</p>	<p><i>(Names are illustrative only and do not imply partnerships or endorsement.)</i></p> <p>Open space management: Range of government, non-profit, and community groups</p> <p>Park operations: Gehl Institute and other urban planning and design groups</p> <p>City operations: MySidewalk, Namara, Stae, and other platforms supporting city operations insights</p>

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Core Digital Services That Others Can Build On



Sidewalk Labs' proposed service or application	What urban data it proposes to use and publish	Possible third-party applications that could build on this data	What existing ecosystem the innovation supports
Outcome-based building code This proposed real-time building code system could monitor noise, nuisances, and structural integrity to help a mix of uses thrive without sacrificing public safety or comfort.	Strain gauges, vibration, odor, sound pressure, decibel meter (e.g. only volume level, not recording audio), lead detection. Safety sensors: Sprinkler pipe pressure, fire pump diagnostics, emergency lighting diagnostics, heat, smoke, CO ₂ , CO PM 2.5, PM10, VOC.	City government could use this information to develop new outcome-based regulatory systems for code compliance. City planners could use this information to develop new outcome-based zoning standards. Planning researchers could use this information to study the relationship between mixed-use development and local economic growth. City agencies or architectural groups could create apps to visualize building structural integrity issues.	<i>(Names are illustrative only and do not imply partnerships or endorsement.)</i> <i>Environmental collection:</i> Aclima, AQMesh, Awair, Concrete Sensor, Fibos, Koto Labs, Noiseaware, SafeHub. <i>Building outcomes mapping:</i> Black Arcs, Ratio City, Map-Your-Property.

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Thank You

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**Pages 122-139
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c) & 20(1)(d)
of the *Access to Information Act***

**Les pages 122-139
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c) & 20(1)(d)
de la *loi sur l'accès à l'information***

Economic Development

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING
ASSISTANT DEPUTY MINISTERS

JOSH SIREFMAN | STEVEN TURELL | WILL FIELDS | APRIL 2, 2019

Realizing a Shared Objective for Inclusive Growth

The proposal included in Sidewalk Labs' Master Innovation and Development Plan (MIDP) lays the foundation for achieving the economic development and inclusive growth objectives shared by Waterfront Toronto and all three levels of government.

During the fourth Sidewalk Toronto public Roundtable in December 2018, Waterfront Toronto introduced a set of Priority Outcomes for the MIDP, consistent with the objectives of its RFP for an Innovation & Funding Partner:

1. Sustainability and Climate Positive Development
2. Affordability and Inclusivity
3. New Mobility
4. Digital Innovation with Responsible Data Use
5. Job Creation and Economic Development

These objectives reflect values shared by Waterfront Toronto, Sidewalk Labs, and all three levels of government, and are core to the ideas and innovations proposed in the MIDP.

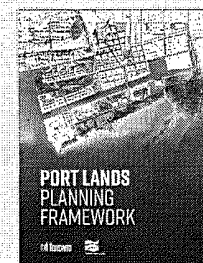
Sidewalk Labs Proprietary and Confidential

City of Toronto Official Plan



"Today, the real competitive advantage for urban economies lies in the foundations that support growth in economic clusters that bring new wealth to the region: A well-educated, highly-skilled labour force; research and development leading to innovation; access to financial capital; adequate infrastructure, including advanced information and communications networks; a dynamic business climate; an enviable quality of life; and safe, cohesive, congenial and inclusive neighbourhoods."

"Objective: Actively pursue land uses that will shape prosperity and increase Toronto's global competitiveness and drive a strong, production-oriented, digitally-connected, innovative and diverse economy... There are opportunities to seed and target industries that are compatible with existing uses to remain and contribute to a full and diverse complement of uses and opportunities for Torontonians. Key industries include further expansion of production, interactive and creative industries but also targeting new sectors that can advance an innovative and diverse economy."



Port Lands Planning Framework

2

A New Economic Engine to Drive Accelerated Job Growth

Sidewalk Labs' approach to economic development can help Toronto realize the full potential of the eastern waterfront on a significantly expedited time frame, resulting in more than 70,000 jobs by 2050.

The Sidewalk Toronto project provides a unique opportunity to help meet and exceed government goals for inclusive growth by generating a new economic engine — one designed specifically to improve quality of life, affordability, and prosperity for residents, workers, and businesses.

Sidewalk Labs proposes a two-part approach to economic development with the potential to catalyze significant jobs and growth anchored around urban innovation:

1) Accelerated Development

Sidewalk Labs plans to help boost general economic growth by accelerating development across the eastern waterfront

2) A Cluster for Urban Innovation

Sidewalk Labs plans to help catalyze a cluster focused on urban innovation, including through the establishment of the Innovative Development and Economic Acceleration (IDEA) District, which would be subject to a set of policy tools designed to promote innovation.

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The Economic Development Chapter | Volume 1

A Accelerating Development of a Network of Next-Generation Neighbourhoods

- Unlock the waterfront through infrastructure investments
- Anchor waterfront growth with a new Google campus
- Attract talent and jobs with complete communities
- Support new and existing industries at the waterfront
- Plan for prosperity with equity

B Sparking a Cluster in Urban Innovation

- Leverage Toronto's existing innovation ecosystem
- Create the conditions for urban innovation
- Launch an Urban Innovation Institute (UII)
- Establish a new venture fund for local, early-stage enterprises

C Anticipated Impact

Sidewalk Labs' Commitments

Unlocking the waterfront requires a critical mass of diverse talent, knowledge, and investment. But without the right catalysts, even all the correct ingredients sometimes take too long to deliver results. That's why Sidewalk Labs is proposing a series of components to accelerate growth.

Front-End Infrastructure Investment

Sidewalk Labs is proposing upfront investments in a series of critical infrastructure systems to accelerate development, including offering financing support for an extension of the light rail system (LRT).

Urban Innovation Institute

Sidewalk Labs will help launch an independent, non-profit Urban Innovation Institute — designed in collaboration with local academic institutions — to serve as a new epicentre for applied research focused on urban challenges.

Expanded Google Campus

Relocating Google's Canadian headquarters to Villiers West can spark the development of an innovation campus that supports thousands of new jobs across a range of new and existing industries.

Venture Fund

Sidewalk Labs plans to provide initial capital to establish a new venture fund to support local, early-stage entrepreneurial activity in urban innovation, designed for Ontario and Toronto-based enterprises and entrepreneurs.

A Unique Set of Conditions for Innovation

Sidewalk Labs will integrate a unique set of physical, digital, and policy conditions for researchers, entrepreneurs, civic organizations, government agencies, and all third parties to tackle difficult urban challenges.

Sidewalk Works

Sidewalk Labs commits to the hiring targets and objectives of the Waterfront Toronto Employment Initiative and the establishment of a non-profit entity designed to build an inclusive talent pipeline, support on-site employers, and create a culture of inclusion in the workplace.

UrbanMetrics' Economic Impact Analysis

To help predict and measure the impact of this approach to economic development, Sidewalk Labs engaged urbanMetrics, a leading Toronto-based firm with extensive experience on the waterfront.

The urbanMetrics analysis demonstrates both the one-time and recurring benefits associated with Sidewalk Labs' proposal, compared to a more incremental approach to development based on prevailing land-use policies and planning trends.

UrbanMetrics Scenarios:

Baseline Scenario: Based on the current set of government-created planning documents for the project geography (including zoning where it exists, precinct plans, and the Port Lands Planning Framework). This scenario does not make any assumptions about how implementation of proposals in these documents might evolve over time.

Proposed MIDP Plan: Accounts for specific elements and planning approaches that differentiate these plans from traditional development. The scenario considered the IDEA District to refer to its proposed full geographic scope, including Quayside and the River District, as well as the optional expansion areas south of the Ship Channel.

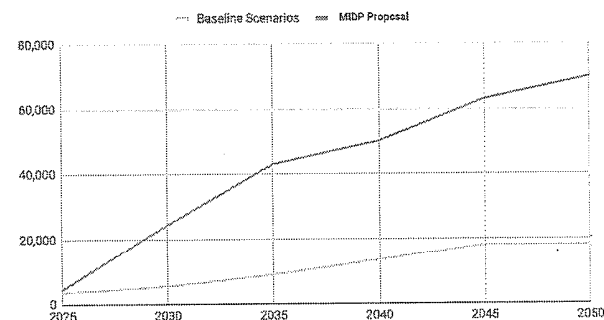
Measuring Impact

Quayside: Application of Sidewalk Labs' approach in Quayside is a critical first step in realizing the city's goals and the economic potential of the waterfront; it is expected to result in 3,900 direct jobs and a one-time vertical construction impact of \$1.6 billion in value added to the Canadian economy alone.

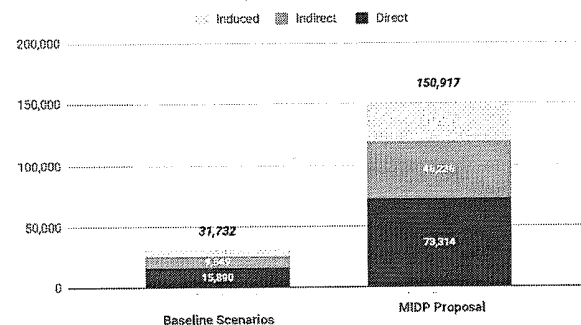
River District: These impacts would extend to the River District, resulting in an additional 42,500 direct jobs and a one-time vertical construction impact of \$16 billion in value added to the Canadian economy.

IDEA District: At full proposed buildout, expected by 2050, the project could inject over 70,000 direct jobs into the IDEA District and spur the creation of an additional 75,000 throughout Canada (60,000 within Ontario), all of which could be delivered on a far more accelerated timeline compared to plans in place today.

PERMANENT JOB GROWTH 2025-2050



TOTAL CANADIAN JOBS: 2050
Direct, Indirect and Induced Jobs



Unlock the Waterfront through Infrastructure Investments

Sidewalk Labs' holistic planning approach prioritizes accelerated delivery of district-scale infrastructure systems, setting the necessary foundation to support widespread development and providing critical connectivity to and from the city's existing economic centres.

Waterfront Toronto and all three levels of Canadian government have taken major steps towards reconnecting Torontonians to the waterfront, including through the \$1.25 billion Don Mouth Naturalization and Port Lands Flood Protection Project announced in 2017.

Yet the additional utility, energy, and public transit infrastructure needed to enable development of the eastern waterfront is estimated at upwards of \$4.5 billion.

According to a 2019 report prepared for the Waterfront BIA by the engineering and development consultancy Hatch, a delay in light rail development until 2045 would result in over \$20 billion in forgone tax revenue across all three levels of government and cost more than \$1.8 billion in lost productivity.

Sidewalk Labs: Proprietary and Confidential



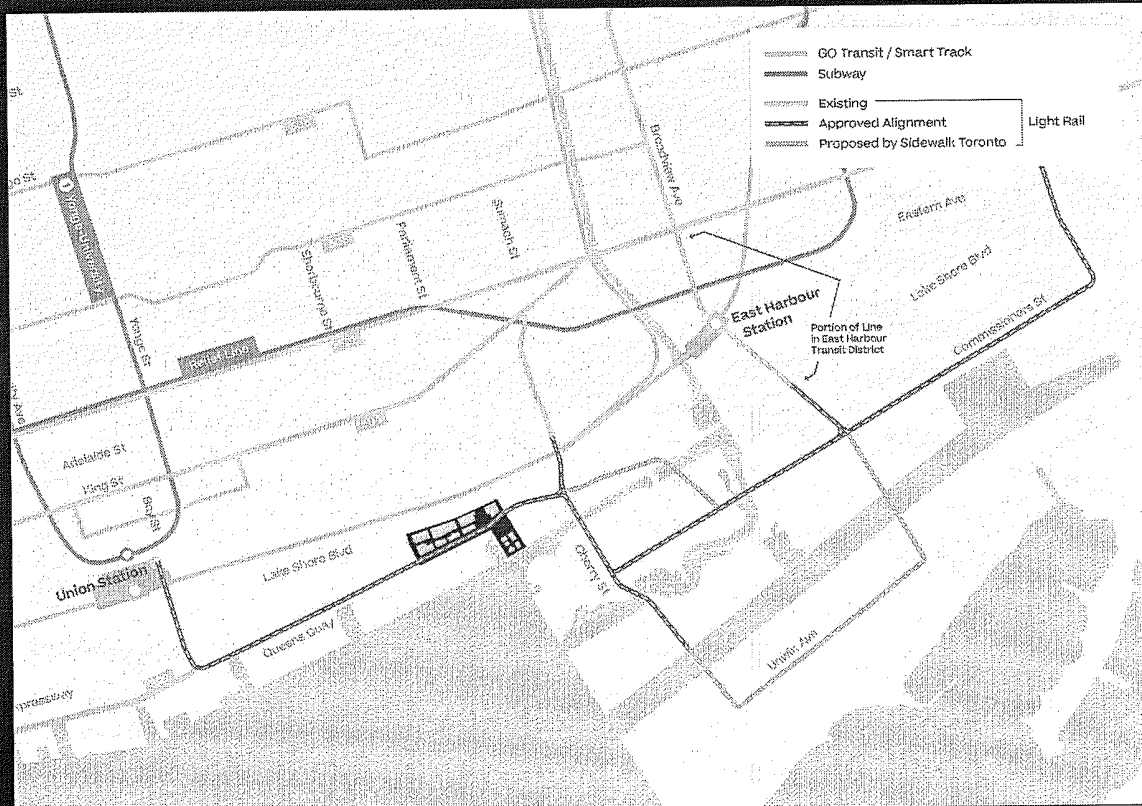
Accelerated Delivery of the Light Rail Extension

Sidewalk Labs endorses a \$1.6 billion, 9.15-kilometre light rail extension that would bring the City's existing plans farther into the eastern waterfront to serve future development.

To help accelerate the implementation of this extension, Sidewalk Labs commits to providing upfront financing, which could facilitate the delivery of a significant portion of the system years sooner than currently projected in the TTC 2018 Corporate Plan.

Sidewalk Labs anticipates the light rail extension would link to the city's expansive existing network, including connections to multiple routes that carry over 250,000 passengers daily.

At full build out of the extension, Sidewalk Labs estimates that it could support roughly 113,200 daily trips to the eastern waterfront and reduce car trips by nearly 60 percent.



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Anchor Waterfront Growth with a New Google Campus

Relocating Google's Canadian headquarters and surrounding it with a new public campus could draw talent and innovators from around the world and amplify the waterfront's economic potential.

The MIDP includes a proposal for an innovation campus on Villiers Island, including approximately 2 million square feet of mixed-use development, anchored by Google office space of at least 500,000 square feet with space to support 2,500 jobs.

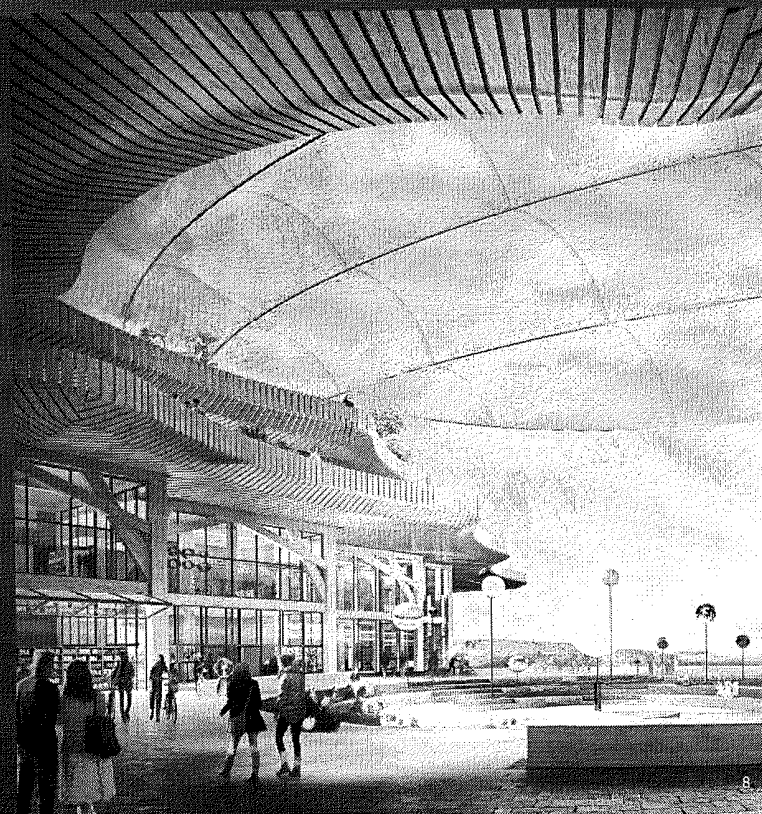
A Connected Campus: The Campus would feature residential spaces integrated with non-residential spaces for business, cultural, retail, and community uses. The headquarters itself would include areas dedicated as Google workspaces, as well as more open, flexible spaces to support a range of community uses, with the flexibility to change over time.

- **Inviting a wide diversity of players:** A range of commercial, retail, and community spaces of all sizes would enable businesses large and small to locate within this new economic centre, ensuring that the eastern waterfront is open for business to a broad range of players.

Attracting Talent and Best-in-Class Employers: A connected campus, filled with a range of businesses and neighbourhood amenities would help attract a deep talent pool of workers and a range of best-in-class employers, establishing the neighbourhood as one of Canada's premier business and innovation districts.

Supporting the Growth of the Local Innovation Ecosystem: In addition to driving the development of an ecosystem for innovation along the eastern waterfront, the establishment of a larger Google headquarters on Villiers Island has the potential to strengthen the emerging innovation corridor between Toronto and Kitchener-Waterloo and support the growth of both locations.

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The Catalytic Impact of a Google Presence

Establishment of Google campuses in other cities has consistently demonstrated significant impacts in the local real estate market that far outpaces the rest of the city.

To estimate the potential impact of Google's relocation to the waterfront, Sidewalk Labs conducted extensive research on the impact of Google in cities around the world.

Analysis utilized a case study approach, comparing key metrics across 5 markets before and after Google re-location: New York, Chicago, Austin, Los Angeles, and London, each of which has between 1,000 and 10,000 Google employees, a range that indicated the impact of the proposed new campus

Metrics analyzed included:

- Commercial rents, asset values, office inventory, occupancy, and value created
- Residential rents, asset values, and occupancy
- Retail rents

In each city studied, percentage growth of commercial inventory within the local market over the five years following Google's arrival outpaced the growth exhibited in each city's broader top-of-market business districts.

CITY	CENTRAL BUSINESS DISTRICT GROWTH POST GOOGLE	MICRO-MARKET GROWTH POST GOOGLE
NYC (2005-2010)	-0.1%	30.6%
Chicago (2013-2018)	19.0%	108.0%
Austin (2015-2018)*	23.6%	64.4%
Los Angeles (2012-2017)	0.0%	21.8%

*Google opened its office in Austin in 2015. Commercial inventory analysis for this location is based on a three-year period rather than a five-year period.

Attract Talent and Jobs with Complete Communities

An approach to planning that emphasizes a vibrant mix of homes, offices, shops, and community spaces — initiated in Quayside and expanded across Villiers West — could welcome significant economic opportunity for businesses large and small.

An expanded public realm that draws people outdoors. Residents and workers benefit from open spaces and sidewalks made comfortable more days of the year thanks to a set of weather-mitigation tools — deployed in real time based on micro-climate data — that provide shade from the sun and shelter from the elements.

A street network that prioritizes pedestrians and public transit. Sidewalk's proposal features a street network designed to expand pedestrian space by up to 118 percent. This improved walkability and public transit access form the foundation of a complete community that puts homes near work and residents near essential daily services.

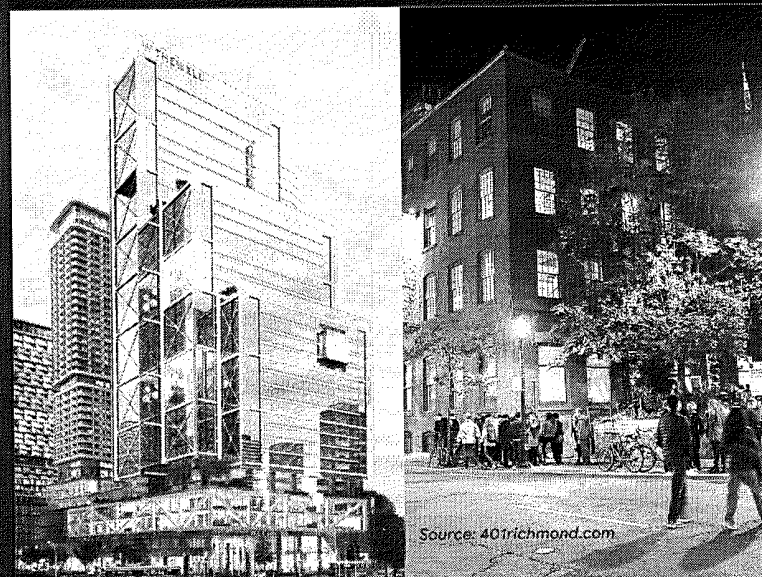
Adaptable building spaces that accelerate renovations. Adaptable "Loft" and "Stoa" spaces designed to accommodate both residential and non-residential uses can ensure an ongoing mix of households and businesses while reducing vacancy time.

A new approach to programming ground floors that expands opportunities. Adaptable stoa space on the lower two floors of buildings are designed to accommodate a wide range of retailers, pop-up shops, civic groups, and maker spaces.

A range of housing options that improve affordability. In addition to a 40 percent below-market housing program, efficient unit designs can expand housing options for single-person and multi-generational households alike, enabled by advances including access to off-site storage space with on-demand shipping.

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Toronto's Two Kings demonstrate how the nature of urban experiences in mixed-use districts represents a marked difference from traditional economic centres, with the capacity to draw new talent and companies, facilitating more diverse economic activity in cities.



Support New and Existing Industries at the Waterfront

The network of neighbourhoods that emerge from Quayside and Villiers West would connect three anchors of economic activity — the urban innovation campus, a hub of new office space at East Harbour, and Toronto's Film District — bringing economic activity eastward in Toronto.

Waterfront Toronto and the City of Toronto have played a leading role in sparking new business activity, an ecosystem for innovation, and the development of new communities along the waterfront.

Partnerships with the development community in recent projects at East Bayfront, the West Don Lands, Corus Entertainment, George Brown College, and Menkes Developments' Waterfront Innovation Centre have set the stage for a Waterfront Innovation Corridor and a significant concentration of employment extending into the developments of Quayside and Villiers West.

When combined with two other major economic drivers — First Gulf's East Harbour project, which will provide necessary expansion relief for the downtown office market,⁴³ and the current and future activity within the Film District and Media City — the volume and diversity of economic activity would transform the eastern waterfront into a second commercial core for Toronto.

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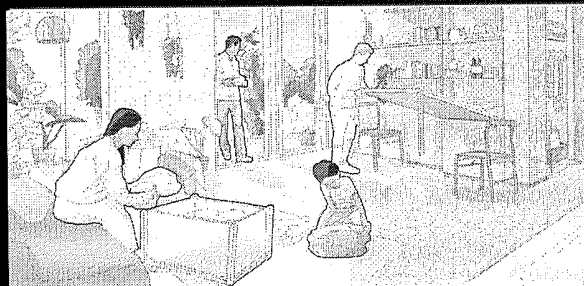


Plan for Prosperity with Equity

Sidewalk Labs is committed to not only spurring sustainable economic development on the waterfront but to doing so in a way that is equitable to all, expanding opportunities for those who have traditionally faced barriers to prosperity.

Affordability and Accessibility

Sidewalk Labs' Commitments



Anchored by 40 percent below-market housing

- Potential to create over 10,000 units of affordable housing across the IDEA District
- Improve "all-in" affordability of the neighbourhood
- Accessibility initiatives accommodate residents of all ages and abilities

Workforce Development

Sidewalk Works

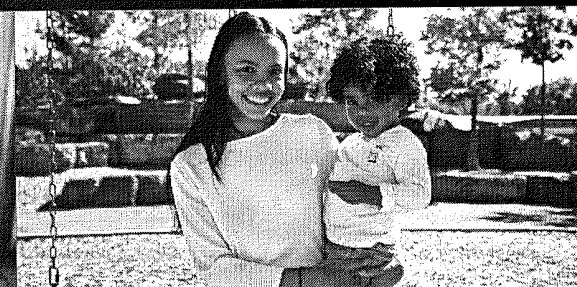


Preparing Torontonians for the 21st-century economy

- Sidewalk Works, a nonprofit entity, will help those who are currently underrepresented in the tech sector prepare for jobs in the new economy
- Build stronger and more inclusive pathways into the urban innovation economy
- Curate skills training to meet real-time employer needs

Diversity, Equity, and Inclusion

Opportunities for All Ages, Incomes, and Abilities



Ensuring prosperity benefits everyone

- Build on the Waterfront Toronto Employment Initiative by targeting at least 10% of jobs for racialized youth, women, and Indigenous people
- Implement a construction jobs program for equity-seeking populations
- Invest in new industries, like mass timber, to support a range of new jobs in the long term

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12

Sparking a Cluster in Urban Innovation

Our approach draws inspiration from global examples of successful clusters but is specifically designed to address the challenges to improving life in cities today, which we believe can shape the future of the field, create thousands of jobs, and drive economic opportunity.

Sidewalk Labs was established with the belief that integrating forward-thinking urban design and technological solutions can address big urban challenges and improve quality of life in cities around the world.

This set of solutions informs Sidewalk Labs' definition of urban innovation, broadly described as the interdisciplinary approach to integrating innovations that address all aspects of life in cities into the urban fabric.

- **Urban innovation is a diversified set of industries** — from mobility to waste management to construction — in the process of being redefined by capabilities such as ubiquitous connectivity, machine learning, and digital fabrication
- **The field of urban innovation is now the biggest tech sector on the planet**, attracting more VC investment than high-growth fields like biotech and AI. By 2025, the sector's market value is projected to grow to over \$2.7 trillion.
- **Advancements in the field** often require bringing together players, expertise, and disciplines that might not otherwise intersect in traditional planning practices
- **New solutions that emerge reflect iteration** and they fall along a broad design spectrum: from highly technical solutions like mobility management systems to more systemic solutions like enabling a new pipeline for mass timber construction

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Investing in a Cluster Based Approach

Co-location of expertise and resources in a cluster creates outsized gains for participants and accelerates the pace of industry innovation, boosting regional economic performance (including through higher levels of wage and employment growth as well as spillover benefits to related economic sectors) and serving as a critical lever for foreign investment.

Across a range of industries, as clusters grow and become more specialized, **efficiency and productivity have been demonstrated to increase at an average of 4 to 5 percent.**

Canada is already focused on the critical importance of traded clusters for economic growth. The federal government's recently announced Innovation Superclusters Initiative commits close to \$1 billion to support five new innovation "superclusters." And the Port Lands Planning Framework speaks to the benefits of economic clusters, including the "live-work synergies that will be created with the diversity of employment clusters and uses proposed both in proximity to the new communities, but also in the communities themselves"

Toronto's Innovation Ecosystem Provides a Foundation to Grow the Field

Toronto has many of the necessary assets to drive urban innovation: a network of world-class education and research institutions focused on urban issues, demonstrated commitment from government partners, and the fastest-growing technology economy of any city in the world.

Leading talent and universities

Toronto is home to a wide network of world-class academic and research institutions, which have demonstrated a newfound focus on urban innovation and sparked the establishment of a robust and diverse talent pipeline.

A growing tech and startup ecosystem

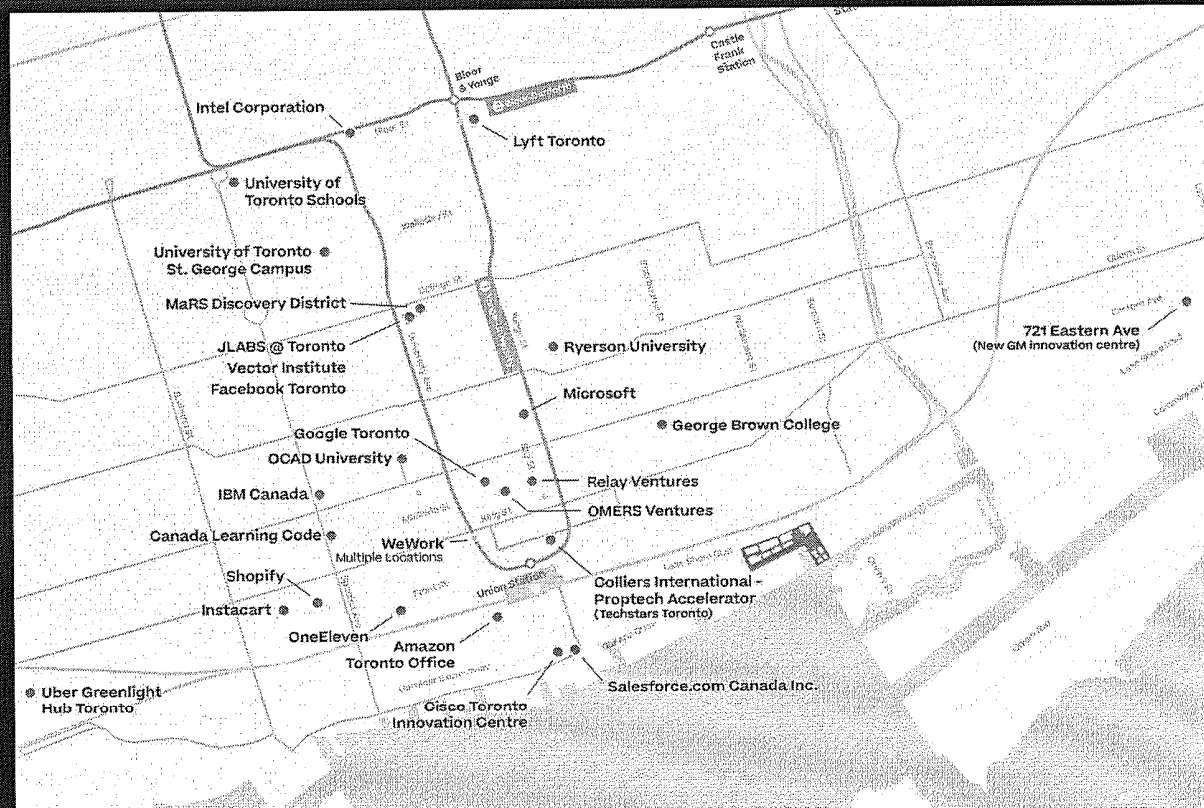
The rapid growth of the ecosystem has created a gravitational pull drawing top talent and further investment to the region, which provides an important foundation for the growth of urban innovation as a field. In 2017 alone, Toronto added over 28,000 tech jobs, and it is now home to over 240,000 tech workers, representing an increase of more than 50 percent over the past five years.

Government support and funding

Engaged partners at all three levels of government who are committed to promoting the success of high-growth industries, including tech, have made significant investments to grow a culture of innovation.

The economic engine envisioned for eastern waterfront would build on these assets — leveraging partnerships with academic institutions, government partners, and innovators of all types, and creating a physical space and network for experimentation and collaboration.

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Create the Conditions for Urban Innovation

The district would provide an integrated set of specific physical, digital, and policy conditions that together form a platform for urban innovation on which others can act and experiment, creating a magnet for innovators from around the world.

PHYSICAL CONDITIONS

- Built environment is designed to be adaptable and enable rapid innovation
- Dynamic pavement and curbless streets enable greater flexibility in the way roads can be managed
- Open access channels allow for incorporation of new systems as they are developed over time

DIGITAL CONDITIONS

- Ubiquitous connectivity, a standardized mount system, and a distributed identity system invite innovation by third parties
- A set of published standards creates a shared foundation for innovators
- An Urban Data Collective could oversee responsible data use and ensure proper protections

POLICY CONDITIONS

- A public administrator can prioritize innovation without compromising the public interest
- Sidewalk Labs is committed to working with policy-makers to demonstrate how digital capabilities can enable policies to achieve their intended outcomes in more flexible ways, while promoting innovation

A Platform for Innovation: When integrated, these three conditions would create a platform for urban innovation that accelerates the development speed and magnifies the impact of new services, tools, and products on the eastern waterfront.

An Urban Innovation Institute as a Portal for Learning and Research

The Urban Innovation Institute would be the vehicle through which academics, industry leaders, entrepreneurs, and civic actors could access, contribute to, and export the learning made possible throughout Quayside and the eastern waterfront.

As urbanization increases worldwide, such a knowledge centre in Toronto would have global relevance, building the field of urban innovation, attracting talent from around the world, exporting replicable solutions, and cementing Toronto's leadership profile.

Creating the Urban Innovation Institute

- The Urban Innovation Institute would be an independent, non-profit institute with its own self-sustaining governance and business model (similar in structure to the Vector Institute, Centre for International Governance Innovation, Perimeter)
- Sidewalk Labs is prepared to provide \$10 million in initial seed funding for the first phase of the development of a comprehensive mission, operating structure, and governance model. To ensure the realization of the Ull, Sidewalk Labs is prepared to provide additional grants and to facilitate the provision of physical facilities for the institute in the Villiers West campus
- It is of paramount importance that the Urban Innovation Institute be developed in close collaboration with a consortium of Toronto institutions, as well as public and private sector stakeholders



The Role of the Urban Innovation Institute (UII)

The institute would play several roles within the district's urban innovation cluster and the broader Toronto innovation ecosystem, as a unique hub of applied research, innovation commercialization and policy acceleration, and skills training for entrepreneurs and workers of the future.

One

Applied Research

The Urban Innovation Institute will enable research partnerships across disciplines, institutions, sectors, or funders, and the development of curriculum to complement those of other institutions.

Working in concert with civic organizations and the public and private sectors, the UII will contribute to the development of replicable operating models that unlock the value of data to address urban issues.

Two

Product Research and Development

The Urban Innovation Institute will serve as the mechanism through which entrepreneurs, companies large and small, and organizations can develop prototypes, test new concepts, or connect with others to realize combined value.

Three

Policy Research and Development

The Urban Innovation Institute will develop effective governance and policy approaches to enable innovation in cities, and ensure the effective adoption and management of urban innovations through new public and civic tools, skills, processes, and approaches.

Four

New Skills Development

The Urban Innovation Institute will be a contributor to industry advisory bodies and work with local academic institutions to provide support for the development of coursework and models for cross-disciplinary research to support degree granting programs. The UII can help Toronto's institutions attract and retain faculty and students, building a world-leading brain trust and local network focused on the practical application of urban innovation.

Establish a New Venture Fund for Local, Early-Stage Enterprises

With more advanced options for early-stage venture funding, Sidewalk Labs aims to contribute to the region's ability to retain talent and IP locally and foster a system of innovation and investment that can sustain lasting economic opportunity in urban innovation for years to come.

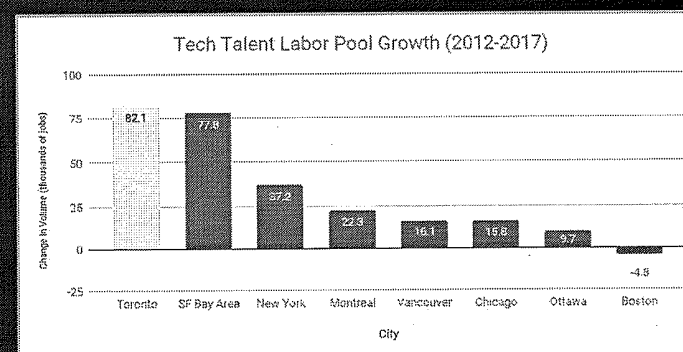
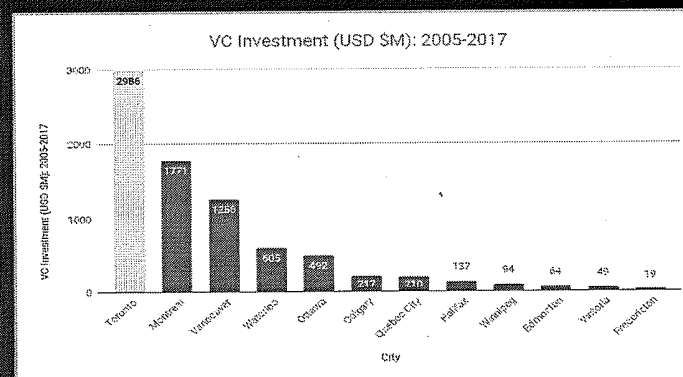
Despite being home to world-class universities and an ever-growing technology and innovation sector, Toronto faces ongoing challenges in ensuring that the talent and expertise developed within the GTA has access to the necessary structures and resources to contribute back into the local innovation ecosystem.

- Compared to startups in other cities, small startups in Toronto face significant challenges to scaling their enterprises. The rate of new startups emerging has far outpaced the amount of VC funding available, forcing entrepreneurs and businesses to slow down development and growth or seek funding elsewhere

To help tackle these challenges, Sidewalk Labs plans to provide initial capital to establish a new venture fund to support local entrepreneurial activity in urban innovation, designated for Ontario- and Toronto-based entrepreneurs and enterprises.

Sidewalk Labs will look to partner with Toronto-based innovation incubators to provide shared services, research support, and flexible space within Quayside and Villiers West, and to ensure that early-stage portfolio companies are able to tap into the networks, resources, and opportunities generated by the urban innovation cluster.

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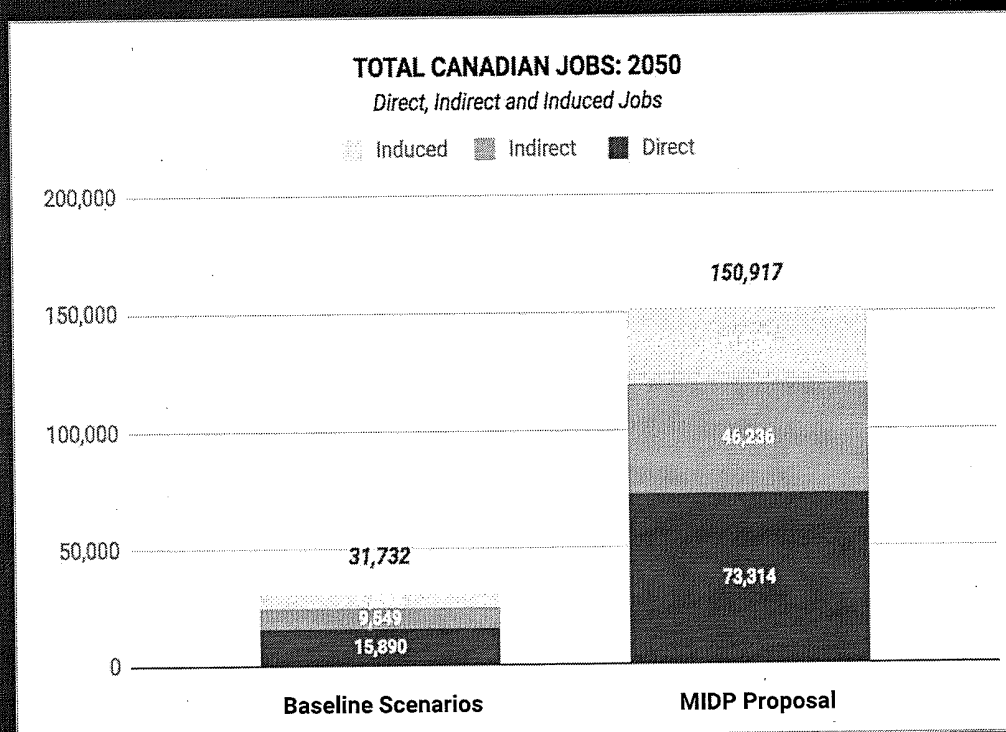


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Spurring the Creation of 150,000 Jobs

Sidewalk Labs' approach has the potential to catalyze 73,500 direct jobs on the eastern waterfront by 2050 and stimulate the development of an additional 77,500 indirect and induced jobs across industries, skill levels, and companies throughout Toronto, Ontario, and Canada.

- By 2050, projected growth represents an increase of approximately 50,000 direct jobs compared to the baseline scenario envisioned in the Port Lands Planning Framework and other existing planning documents.
- An emphasis on innovation, entrepreneurship, and experimentation likely means that a higher percentage of jobs would be created in fields such as professional and scientific services (a more than 100 percent increase, based on the urbanMetrics report), raising the projected average wage for all jobs on the waterfront to \$70,000 — a 17 percent increase from the approximately \$60,000 based on the rough proportion of jobs in the Port Lands Planning Framework.
- Research suggests that for every "high-tech" job created, approximately five non-tech jobs are created, across a wider range of functions and industries and accessible to a broader range of people.

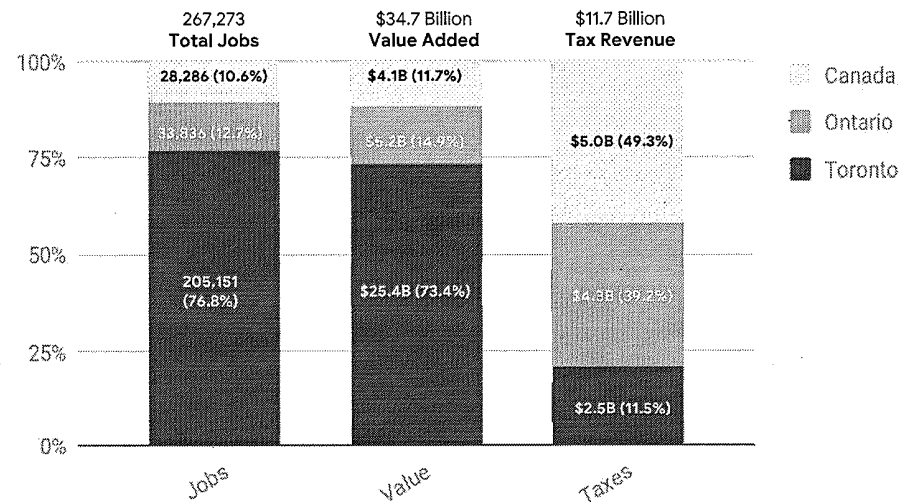


Measuring One-Time Impact

An estimated \$27 billion in new building construction — across the proposed full scale of the project — would more than double the amount in a baseline scenario, and represent a 21 times multiplier to the government's initial \$1.25 billion investment in the Don Mouth Naturalization Project.

If the Sidewalk Toronto project proceeds at the proposed full scale, it would quickly become one of the largest construction projects in the world, providing an enormous number of jobs and generating tremendous value to a city that already has more cranes dotting its skyline than any other in North America. A Sidewalk Labs analysis suggests that, all told, between buildings and infrastructure, **the project's construction could add more than \$25 billion in value to the Toronto economy and create over 250,000 years of employment throughout Canada.**

Distribution of Total Construction Impact of the MIDP Proposal (Vertical and Horizontal)



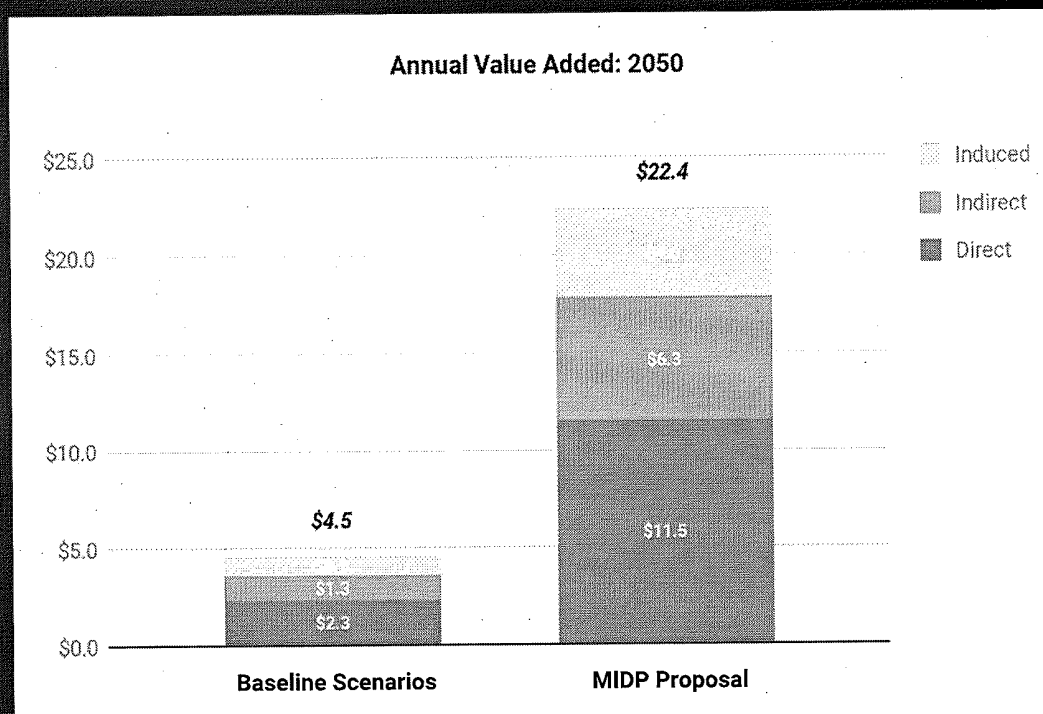
Tripling the Potential GDP Impact

As a significant economic stimulus for the country, the accelerated development of the waterfront could create many higher-paying direct and indirect jobs, generating millions of dollars in additional tax revenues at all three levels of government and, critically, producing significant GDP gains.

UrbanMetrics estimates that the growing global profile of the IDEA District could generate an estimated \$22.4 billion in economic output for Canada each year (GDP) at the full proposed buildout, including \$20.5 billion in Ontario and \$18.5 billion in Toronto, which represents a **262 percent increase*** in value added to the Canadian economy compared to status quo development at completion.

*Note: The 262% increase represents value added at completion of the baseline scenario (approx. 2060), while the chart to the right is representative of value added by 2050, the estimated completion of the Sidewalk Toronto project.

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Economic Development

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING
ASSISTANT DEPUTY MINISTERS

JOSH SIREFMAN | STEVEN TURELL | WILL FIELDS | APRIL 2, 2019

**Pages 162-179
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c) & 20(1)(d)
of the *Access to Information Act***

**Les pages 162-179
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c) & 20(1)(d)
de la *loi sur l'accès à l'information***

Infrastructure Canada

Quayside Master Innovation and Development Plan (MIDP)

Interdepartmental Feedback Templates for Federal Working Group

Infrastructure Canada, April 2019

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MIDP Pillars

Mobility (provided)

Sustainability (provided)

Buildings (TBD)

Affordable Housing (TBD)

Digital Innovation (TBD)

Social Infrastructure (TBD)

Public Realm (TBD)

Economic Development (TBD)

Partnership Proposal (TBD)

DRAFT

Master Innovation and Development Plan – Mobility

MOBILITY PILLAR	
Description	The Mobility Pillar describes innovation ideas that work toward a transportation system that is as convenient as today's while also being safer and healthier, more affordable, and less disruptive to public space.
Category	MIDP volume 2
SUMMARY OF MAIN INITIATIVES	
New Mobility & Self Driving Technology	<ul style="list-style-type: none"> Encouraging the shared use of ride-hailing services through pricing Management of staging areas and pick-up/drop-off zones Improving connections to public transit by introducing new modes that reduce the “last-mile” challenge Micro-transit services that complement fixed-route public transit Electric car-share options available on-site An Integrated Mobility Package that can encourage the use of sustainable modes and empower travelers to make smart travel choices, reducing the need to own a car
Expanding Public Transit	<ul style="list-style-type: none"> Expedited delivery of LRT to Queens Quay East and Villiers before residents move in <ul style="list-style-type: none"> Funded through value capture in the creation of a transit benefit district financed by a combination of bonds and/or Sidewalk Toronto Designing streets that prioritize transit and improve pedestrian and cycling connections to transit
Mobility Management	<ul style="list-style-type: none"> Dynamic curbs that shift based on daily demand to optimize space and that evolve over time as new transportation trends emerge Dynamic pricing Dynamic signals (Signal priority) Dynamic routing of CAVs A new central entity, called the Waterfront Transportation Management Association (WTMA) responsible for managing the mobility system and offering the integrated mobility package
Walking & Cycling	<ul style="list-style-type: none"> Expand bike-share, e-bike, and other low-speed vehicle options Adaptive signal priority to make walking and cycling safer and more comfortable Improve safety and year-round comfort for pedestrians and cyclists with heated pavement Improve connections to other neighbourhoods Plan for a “15-minute” neighbourhood by offering a dense concentration of commercial, retail, recreational and neighbourhood amenities.
Deliveries & Freight	<ul style="list-style-type: none"> A neighbourhood logistics hub that consolidates deliveries, waste, and storage Waste collection and deliveries are removed from the street and move through an underground network Smart containers designed to be carried from the logistics hub to the final destination on a variety of vehicles types
People-First Streets	<ul style="list-style-type: none"> Four new street typologies to take advantage of autonomous vehicles to eliminate parking, obey speed limits, and defer to pedestrians and cyclists Streets that are accessible and inclusive Streets that can adapt daily or over time as trends change streets that become place

POLICY AND/OR REGULATORY CONSIDERATIONS – For Interdepartmental Input	
Compliance with Federal Legislation and Regulation	<p><i>An indicative list of federal legislation that may be impacted by proposed Mobility Pillar initiatives is provided below. Please identify any other legislative or regulatory frameworks within the purview of your organization that may be relevant to the consideration of these initiatives.</i></p> <p><i>Please indicate the extent to which proposed initiatives under the Mobility Pillar align with implicated federal legislative/regulatory frameworks. Reference whether the proposal is likely to be highly, moderately, or minimally impacted by the legislative/regulatory framework.</i></p> <div style="background-color: black; width: 100%; height: 100px;"></div>
Alignment with Federal Policy or Program Priorities	<p><i>Please indicate the extent to which Mobility Pillar Initiatives may be relevant to existing federal policy, plan, or program priorities that fall under the purview of your organization,</i></p> <p><i>This should include a description of how the project is aligned to the referenced government objective, and identify links to relevant federal policy document (e.g. Statement of Priorities and Accountabilities, Speech from the Throne, Mandate Letter, Budget, Economic Update, etc.).</i></p>

Master Innovation and Development Plan –Sustainability

SUSTAINABILITY PILLAR	
Description	The Sustainability Pillar describes proposals that work toward a new standard for urban sustainability and replicable path to climate-positive communities.
Category	MIDP volume 2
SUMMARY OF MAIN INITIATIVES	
Neighbourhood Electrification	<ul style="list-style-type: none"> • Thermal grid capturing heat from geothermal wells and sharing heat between buildings. No connection to existing DES at QS. • Electrical grid to support electric heating, cooling, and vehicles, developed in partnership THES. Sized at BAU due to load management by SWL. <ul style="list-style-type: none"> ○ Baseline is 8.6MW - with all electrification, the grid would need 60% more capacity. SWT peak reduced to 8.7MW. • TGS Tier 3 buildings with heat-pump-based HVAC enabling them to not be connected to natural gas distribution. “Passive House-inspired” • Rooftop solar PV to supply 9% of annual energy demand and offset load during peak times during the afternoon. 80% of roof space - ~904kW • Different electricity rates, unique to this neighbourhood, allow residents to customize bill based on GHG content, cost certainty, and shares in DERs • Energy management schedulers that allow residents & building operators to automate demand on electricity, reducing cost (Purposeful Solutions) <p>This suite of technology and infrastructure should allow Sidewalk Toronto to avoid installing natural gas distribution in all new construction. Through partnership with Toronto Hydro (underway), Sidewalk Toronto can also avoid very costly infrastructure associated with going all-electric.</p>
Sustainable Materials	<ul style="list-style-type: none"> • Tall timber CLT construction up to 30 storeys, with 1:10 lower GHG than steel or concrete • Digital design to enable prefabricated construction, reconfigurable interior wall panel systems = less construction waste. • Cradle to Cradle® materials including fibrous drywall, floor materials and tall timber, taking full lifecycle approach
Solid Waste Management	<ul style="list-style-type: none"> • Responsive digital signage to improve recycling rates with AI & computer vision • Pay-as-you-Throw smart waste chutes that tracks volume of waste via an app • Vacuum waste collection that brings separated streams to a central facility • Anaerobic digestion at larger scale, but relying on City of Toronto for Quayside
Low Carbon Mobility	<ul style="list-style-type: none"> • Electric “last-mile” freight delivery enabled by an on-site freight consolidation centre • Improved transit access with an expedited delivery of Queens Quay LRT through innovating financing and the introduction of micro-transit services • An Integrated Mobility app that can empower travelers to make smart travel choices, reducing the need to own a car
Deliveries & Freight	<ul style="list-style-type: none"> • A neighbourhood logistics hub that consolidates deliveries, waste, and storage • Waste collection and deliveries are removed from the street and move through an underground network • Smart containers designed to be carried from the logistics hub to the final destination on a variety of vehicles types

POLICY AND/OR REGULATORY CONSIDERATIONS – For Interdepartmental Input

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Alignment with Federal Policy or Program Priorities	<p><i>Please indicate the extent to which Mobility Pillar Initiatives may be relevant to existing federal policy, plan, or program priorities that fall under the purview of your organization,</i></p> <p><i>This should Include a description of how the project is aligned to the referenced government objective, and identify links to relevant federal policy document (e.g. Statement of Priorities and Accountabilities, Speech from the Throne, Mandate Letter, Budget, Economic Update, etc.).</i></p>

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	May (weeks ending in)					June
	May 3	May 10	May 17	May 24	May 31	June 7
INFC Prep (pre-release)	ADM Briefing 29-Apr	IREQ 09-May	ADM Briefing 13-May	Civic Lab 22-May	ADM Briefing 28-May IREQ 30-May IGSC May 30	DSAP 06-Jun MIDP
INFC Engagement (post release)						
WT Process						

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		May-18				
		May 4	May 11	May 18	May 25	Jun 1
ADM Briefings			IGSC May 10			
Key Meetings						
Ontario Auditor General Report						
Ministerial Briefings						

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Digital Innovation and Data Governance: Urban Data Collective

Proposal

Summary of proposal.....

Overall Federal Impact/Interest ●		
Policy/Program	●	Comment....
Legislative	●	Comment....
Fiscal	●	Comment....
Shared tri-gov	●	Comment....
Governance	●	Comment....
OGD interest	●	ISED, Office of the Privacy Commissioner

Initial view

Crisp summary of initial views, including from subject matter experts regarding, e.g., practicality/feasibility of proposal, innovative nature, key considerations, etc

Key Messages








- 3-4 key messages
- ...
- ...



Digital Innovation and Data Governance: Urban Data Collective

Proposal

The Digital Innovation chapter describes the foundations for digital tools that can help communities address challenges and improve services, while creating the open conditions for innovation. The bulk of the chapter is focused on a new framework for Responsible Data Use that will set a new global standard for protecting personal privacy while encouraging innovation.

Overall Federal Impact/Interest 		
Policy/Program		Comment....
Legislative		Comment....
Fiscal		Comment....
Shared tri-gov		Comment....
Governance		Comment....
OGD interest		ISED, Office of the Privacy Commissioner

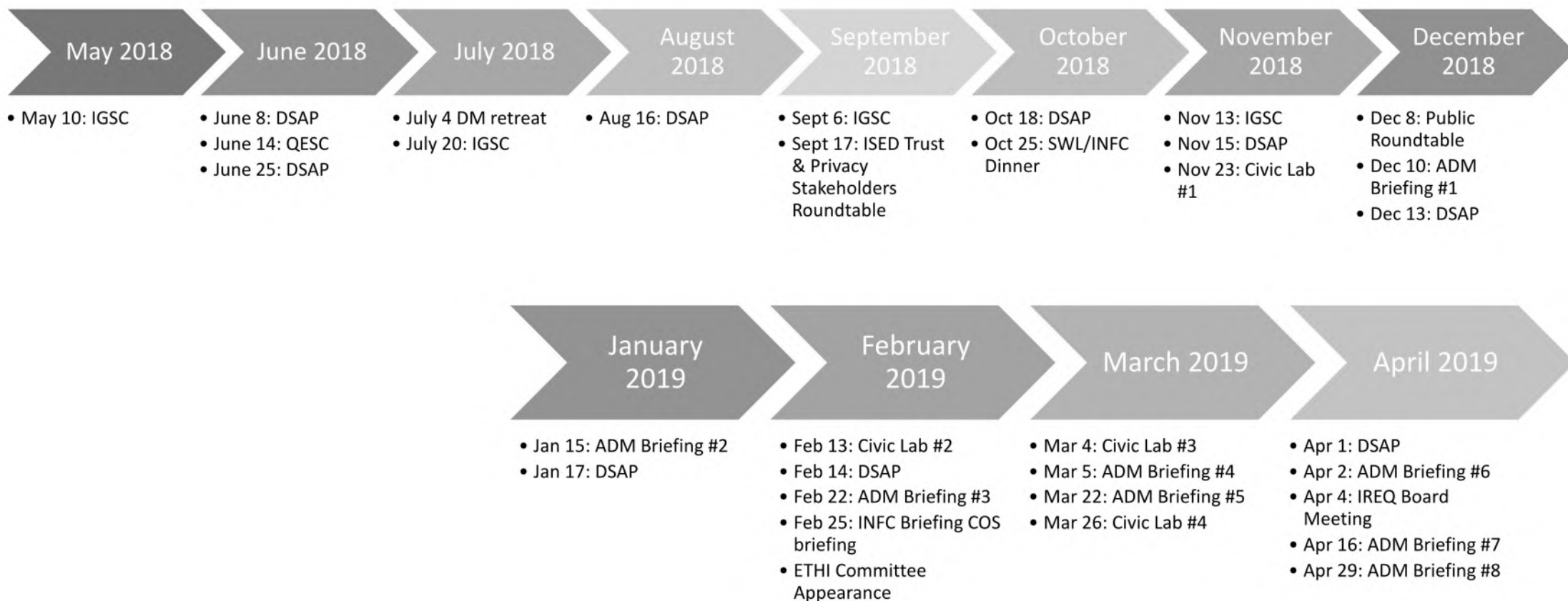
Initial view

Crisp summary of initial views, including from subject matter experts regarding, e.g., practicality/feasibility of proposal, innovative nature, key considerations, etc

Key Messages

- 3-4 key messages
- ...
- ...

INFC WT Quayside Public Engagement 2018-19



IPI Master Innovation and Development (MIDP) Work Plan

ATIA - 21(1)(a)

ATIA - 21(1)(b)

Pre-Release

Engagement to date through:

...to inform product development around core MIDP Pillar issues:

Product development	Rationale	Status

...and support preparatory activities:

Key Activities	Intended Outcome	Date

Post-Release

OGD engagement (consultation):

Issue	OGD	Date	Objective	Issues flagged

Bilateral awareness briefings with OGDs (as required):

MIDP Evaluation

Tri-government Coordination

WT Consultation
& Evaluation Path:

Phase 3
(June [7], 2019 - July 31, 2019)

Phase 4
(August 1, 2019 - August 31, 2019)

Phase 5
(September 1, 2019 - December 2019)

MIDP Issue Sheet – Mobility

Description

The **Mobility Pillar** describes innovation ideas that work toward a transportation system that is as convenient as today's while also being safer and healthier, more affordable, and less disruptive to public space.

Summary of main initiatives

Proposed measures under the Mobility Pillar include:

- **Streets for People:** A focus on designing streets that are attractive places to be and to maximize pedestrian safety and comfort
- **Adaptability/Dynamic Curbs:** A curb that shifts based on daily demand to optimize space and that evolves over time as new transportation trends emerge
- **Shared and Electric Mobility:** Shared and electric mobility options (e.g. electric bike share) for short trips and to improve connections to rapid transit
- **Cycling:** Building cycling infrastructure to accommodate a diverse range of cyclists, and introducing strategies for improved safety and user comfort.
- **Expanded Public Transit** through expedited delivery of L to Queens Quay East and Villiers West
- **Freight and delivery services** through A neighbourhood logistics hub that consolidates deliveries, waste, and storage through an underground network
- **Mobility management** through a new central entity, called the Waterfront Transportation Management Association

Considerations



Potential Federal Policy and/or Regulatory Considerations



MIDP Issue Sheet – Mobility

Description

The **Mobility Pillar** describes innovation ideas that work toward a transportation system that is as convenient as today's while also being safer and healthier, more affordable, and less disruptive to public space.

Summary of main initiatives

Proposed measures under the Mobility Pillar include:

Tri Government / WT communications meeting on Quayside project
June 7th, 2019 3:30 – 4:30pm

Expected participants:

- MOI: [REDACTED]
- City: [REDACTED]
- INFC: Glenn Campbell, Nancy Faraday-Smith, Caroline Marchildon, Josh Hobbs, Pauline Tam

Context/objectives:

[REDACTED]

KEY POINTS TO REGISTER:

[REDACTED]

**Pages 205-208
are withheld
pursuant to paragraphs
21(1)(a), 21(1)(b) & 21(1)(c)
of the *Access to Information Act***

**Les pages 205-208
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
21(1)(a), 21(1)(b) & 21(1)(c)
de la *loi sur l'accès à l'information***

WT Engagement and Evaluation Path

RECEIPT & RELEASE (Jun 17 – 24)

- **June 17: A.M:** WT releases open letter signaling expectation receipt and go forward consultation process. **P.M:** WT receives MIDP at 1p.m
- **June 18:** Delivery of MIDP to gov't partners
- **June 20:** Op-ed re-asserting WT's mandate, role and experience in leading public consultations
- **June 24: A.M:** Media lock-up and embargo lifted at 2:30p.m. - MIDP and WT note to reader made public.

PUBLIC CONSULTATION PERIOD (Jul - Aug)

- **July 15-22:** WT holds 3-4 public consultation sessions that frame:
 - Proposals at Quayside vs. those going beyond;
 - Physical aspects (i.e. vertical and horizontal infrastructure);
 - Innovation ideas (including new technology);
 - Business case to support implementation
- 2nd round of stakeholder consultations TBD.

NEGOTIATION OF CRITICAL ISSUES (Sept-Oct)

- **Consultation report** provided by WT to SWL.
- WT identifies and discusses **required changes to the MIDP** with SWL.
- [REDACTED]

EVALUATION & BOARD DECISION (Nov – Dec/Jan)

- WT formally **evaluates** the MIDP, with 3rd-party support
- Recommendation(s) submitted to the Board.
- Board decision(s) on whether to pursue some, all or none of the ideas within the proposed MIDP.

Government Activities

- **Communications:** MIN statement, Qs&As, QP card, etc; coordinated tri-gov't messaging
- **June 20th Tri-gov't ADM meeting** Shared approach to engagement with WT, public; confirm shared issues, respective responsibilities
- **MIN BN/Briefing:** System update; key messages, inform of tri-gov't coordination, alignment
- **INFC internal and central agency briefings:** Working-level understanding of MIDP content, sharing of initial holding lines, federal linkages (post-release)

Governments engage constructively in support of the public consultation process [REDACTED]

- [REDACTED]
- **Outreach to key OGDs:** System awareness and development approach to assess issues/opportunities
 - Issue identification; confirm implications; GoC opportunities
- [REDACTED]

- Comments by governments provided to WT management
- If WT chooses to pursue any of the proposed MIDP, the 3 orders of gov't will make decisions related to those elements that fall within their regulatory jurisdiction

	May (weeks ending in)					Jun
	May 3	May 10	May 17	May 24	May 31	Jun 7
INFC Prep (pre-release)	ADM Briefing 29-Apr	IREQ 09-May	ADM Briefing 13-May	Civic Lab 22-May	ADM Briefing 28-May IREQ 30-May IGSC May 30	DSAP 06-Jun MIDP
INFC Engagement (post release)						
WT Process						

[illegible]

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IPI MIDP WORK PLAN GANTT CHART

	May (weeks beginning with)					June (weeks beginning with)				July (weeks beginning with)				August (weeks beginning with)				
	April 29	May 6	May 13	May 20	May 27	Jun 3	Jun 10	Jun 17	Jun 24	Jul 1	Jul 8	Jul 15	Jul 22	Aug 5	Aug 12	Aug 19	Aug 26	Sept 2
	ADM Briefing 29-Apr	Board Committee IREQ 09-May	ADM Briefing 13-May	Civic Lab Wrap-up 22-May	Board Committee IREQ 30-May IGSC May 31	DSAP		MIDP release 24-Jun	WT Board Jun 27									
INFC Prep (pre-release)																		
Internal INFC Briefings																		
INFC Engagement (upon release)																		
WT Process																		

	May-18				Jun 1
	May 4	May 11	May 18	May 25	
ADM Briefings		IGSC May 10			
Key Meetings					
[REDACTED]					
Ontario Auditor General Report					
[REDACTED]					
Ministerial Briefings					
[REDACTED]					

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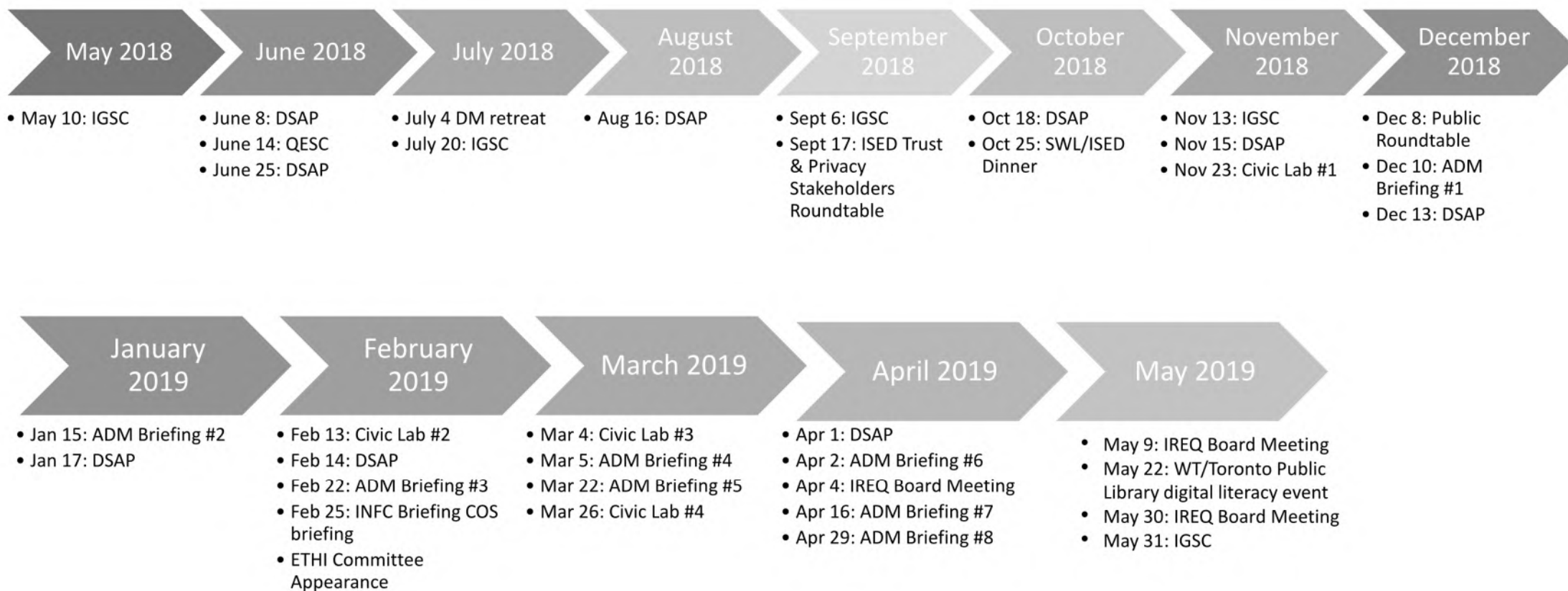
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INFC WT Quayside Public Engagement 2018-19



Pre-Release

Engagement to date through:

...to inform product development around core MIDP Pillar issues:

Product development	Rationale	Status

...and support preparatory activities:

Key Activities	Intended Outcome	Date

Release

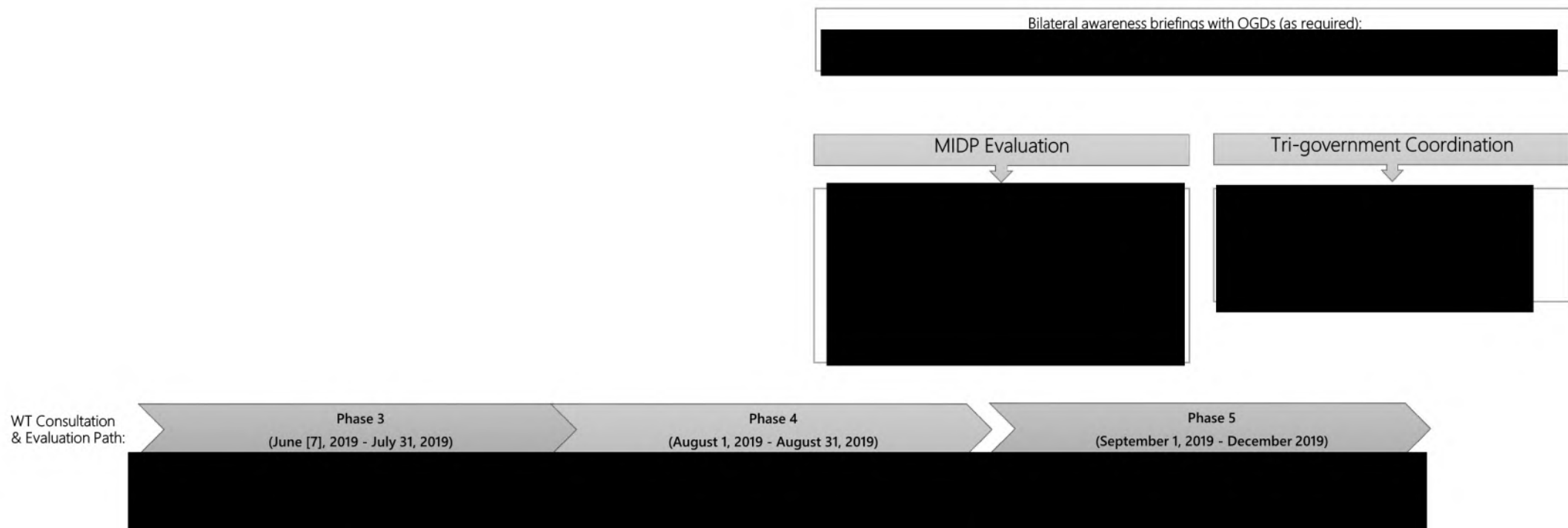
INFC & OGD engagement:

Activities	Products	Outcome	Date

MIDP Evaluation

Tri-government Coordination

WT Consultation & Evaluation Path



Draft products that are in development for providing federal input feedback on the Quayside Master Innovation and Development Plan (MIDP).

These products could be used to coordinate interdepartmental input:

- Overview Deck that provides background on WT/SWL Quayside Partnership and MIDP process (attached)
- Draft Master Analysis Table of MIDP Pillars/Themes (attached)
- Federal impact templates by MIDP Pillar (could be inputted to interdepartmentally)
 - Draft examples for **Mobility, Sustainability** provided (attached)
 - Other templates being developed for:
 - Buildings
 - Affordable Housing
 - Digital Innovation
 - Social Infrastructure
 - Public Realm
 - Economic Development
 - Draft two-pagers on meta issues (under development)
 - Scale
 - Privacy
 - Governance, mandate and jurisdictional issues
 - Intellectual property
 - Financial/Economic feasibility

MASTER ANALYSIS TABLE – FEDERAL FEEDBACK – QUAYSIDE MIDP

Pillar/Theme	Implicated Departments	Proposals (MIDP page no.)	Federal Policy or Legislative Link (Specific Reference if applicable*)	Issues	Comment	Link to Provincial or Municipal Impacts
Buildings: A built environment that is more usable, efficient and adaptable.	✦ NRCan	Reducing Construction Costs <ul style="list-style-type: none"> Mass timber factory-based production Factory with complete library of building parts Coordinate supply chain with digital delivery system Helping Neighbourhoods Adapt <ul style="list-style-type: none"> Design and adaptable “Loft space” Flexible interior wall system to facilitate renovations and conversion of open spaces in retail stalls Expanding Housing Options <ul style="list-style-type: none"> Design more efficient and flexible units Maximize shared building spaces and communal areas (incl. co-working spaces, dining areas, recreational areas) On-demand or shared storage facilities No parking 	National Building Code of Canada Canadian Aviation Regulations			
Affordable Housing: Inclusive, affordable communities for people of all ages, abilities, and means.	✦ CMHC ✦ ESDC	New Occupancy Types <ul style="list-style-type: none"> Shared equity housing Efficient and co-living units (e.g., combine units with shared building features) Financing Tools <ul style="list-style-type: none"> Factory construction of buildings to reduce the cost and timeframe of construction Pass savings to end user supporting housing affordability Funding from private and public sources, managed in Trust Fund Public/Private Entity to administer/oversee leasing Partnerships and Process Enhancement <ul style="list-style-type: none"> Non-profit partner to operate rental housing unit Centralized application process 	National Building Code of Canada			

*For example: mandate letter, existing program or identified frameworks/strategy, Budget announcement, Annual departmental plan

Pillar/Theme	Implicated Departments	Proposals (MIDP page no.)	Federal Policy or Legislative Link (Specific Reference if applicable*)	Issues	Comment	Link to Provincial or Municipal Impacts
Digital Innovation: Incorporate technological advancements that enhance efficiencies and improve overall quality of life <div></div>	<ul style="list-style-type: none"> ISED OPC Office of CIO CRTC Competition Bureau Standards Council of Canada 	Responsible Data Use Framework & Privacy by Design <ul style="list-style-type: none"> Responsible Data Use Assessments based on a published Responsible Data Use Guidelines. Intended to extend beyond traditional Privacy Impact Assessment Urban Data <ul style="list-style-type: none"> Would involve defining this concept Collected in public spaces, privately owned public spaces, privates spaces not controlled by occupants Civic Data Trust <ul style="list-style-type: none"> Independent steward/manager of data and digital infrastructure based on a charter to ensure beneficial collection of data and protection of privacy Ensuring that value from data is returned to people, communities, government, industry and the society from where it is collected Catalyzing New Digital Services <ul style="list-style-type: none"> Published standards will be publicly available so that third parties can easily build new services Open architecture of any digital hardware or software based on public standards to prevent lock-in from a single technology provider. Open access to data in order to facilitate innovation Open source software code to allow for easy integration of systems Koala Mounts <ul style="list-style-type: none"> Standardized mounts that act as a "USB" for the Urban Environment, allowing for easy installation and connectivity of devices to power and data Network Technologies <ul style="list-style-type: none"> Fibre optic Neighbourhood Wireless WiFi and 5G SuperPon (wavelength division technology) Software defined networks Emerging areas of work: <ul style="list-style-type: none"> Open Data Hub High Resolution Map Security & Redundancy Distributed Credentials 	Canadian Charter of Rights and Freedoms Personal Information Protection and Electronic Documents Act (PIPEDA) Privacy Act Competition Act CUSMA CRTC Act Canadian Telecommunications Common Carrier Ownership and Control Regulations			

*For example: mandate letter, existing program or identified frameworks/strategy, Budget announcement, Annual departmental plan

Pillar/Theme	Implicated Departments	Proposals (MIDP page no.)	Federal Policy or Legislative Link (Specific Reference if applicable*)	Issues	Comment	Link to Provincial or Municipal Impacts
Economic Development: Provide an environment in which an urban innovation cluster to help create opportunities for job creation, entrepreneurial enterprise, and growth of established industries.	✦ ISED ✦ ESDC	Urban Innovation Hub <ul style="list-style-type: none"> Urban innovation institute Google HQ (2,500 jobs in 10 years) Encourages cluster of technology firms anchored by Google HQ Venture fund (\$TK) to grow local urban innovation companies IDEA District to accelerate innovation Flexibility in Design <ul style="list-style-type: none"> "Loft" enables radical mixed use reducing cost / risk for companies and developers (17% or 8.3 million sqft) A digital leasing platform (Seed Space) will make it easy for new occupants to launch a business Reducing fit-out costs helps these spaces remain affordable to local businesses Workforce Development and Mandatory Hiring <ul style="list-style-type: none"> Training and employment opportunities for historically disadvantaged and equity-seeking groups 10% of all construction hours committed to these groups Intellectual Property Tall Timber <ul style="list-style-type: none"> All buildings are tall timber 'catalyzing' new timber industry 4,000 person years of employment with an annual demand of 65,000 - 70,000 cubic metres of CLT At scale: 35% reduction in construction time and 20% reduction in overall costs Other benefits <ul style="list-style-type: none"> Increase in tourism from unique aspects of SWL proposal Improve all-in affordability (reduced transportation costs, housing costs, etc.) LRT financing Unique ability to catalyze economic development 	Mandate letter for Minister of ISED Potential platform commitments? DPP			

*For example: mandate letter, existing program or identified frameworks/strategy, Budget announcement, Annual departmental plan

Pillar/Theme	Implicated Departments	Proposals (MIDP page no.)	Federal Policy or Legislative Link (Specific Reference if applicable*)	Issues	Comment	Link to Provincial or Municipal Impacts
Sustainability: A blueprint of pragmatic solutions for climate positive communities, based on sustainable building materials, technologies and practices.	✦ ECCC ✦ ISED	Neighbourhood Electrification <ul style="list-style-type: none"> ▪ Rooftop solar PV to supply 9% of annual energy demand and offset load during peak times ▪ Thermal grids capturing heat from geothermal wells and sharing between buildings ▪ Automated building energy management, eliminating energy waste and increasing energy affordability Sustainable Materials <ul style="list-style-type: none"> ▪ Tall timber construction – 1:10 lower GHG than steel or concrete ▪ Digital design to enable prefabricated construction and reconfigurable interior wall panel system leading to less construction waste Low Carbon Mobility <ul style="list-style-type: none"> ▪ Improved transit access by facilitating Queens Quay LRT through innovative financing and micro-transit services ▪ Mobility app, allowing travelers to make smart travel choices, reducing need to own a car Solid Waste Management <ul style="list-style-type: none"> ▪ Separating and diverting solid waste with vacuum tubes to centralized facility, rather than landfill ▪ Anaerobic Digestion ▪ Responsive digital signage using AI & computer vision to improve recycling rates Active Water Management <ul style="list-style-type: none"> ▪ Green infrastructure in lieu of concrete (e.g., tree pits, wetlands, bioswales) ▪ Active management, allowing right-sizing and sole use of green infrastructure in the public realm 	Canadian Environmental Protection Act Pan-Canadian Framework or Clean Growth and Climate Change			
Mobility: A transportation system that reduces the need to own a car by providing safe, convenient and affordable options for every trip.	✦ TC ✦ ISED					
Public Realm	✦ PCH					
Social Infrastructure	✦ ESDC ✦ PHAC					

*For example: mandate letter, existing program or identified frameworks/strategy, Budget announcement, Annual departmental plan

Pillar/Theme	Implicated Departments	Proposals (MIDP page no.)	Federal Policy or Legislative Link (Specific Reference if applicable*)	Issues	Comment	Link to Provincial or Municipal Impacts
Partnership Proposal (Volume III): Business plan and governance structure designed to support implementation of the MIDP proposals.		Financial & Economics: Inclusive and based on the Land Valuation Methodology, overall financial business case for: <ul style="list-style-type: none"> Vertical Development Infrastructure IP Revenues 				
		Roles & Responsibilities for: <ul style="list-style-type: none"> Waterfront Toronto Sidewalk Labs Third parties Government 				
		Policies & Regulations: Revisions required by the MIDP, including: <ul style="list-style-type: none"> An IDEA district Government approvals and commitment(s) Transactional agreements that protect both the public and private interests 				
		Economic Development: <ul style="list-style-type: none"> Creating a global hub for innovation Supporting conditions for startups to launch and for entrepreneurs to scale Placemaking that attracts knowledge economy and service workers 				
		Procurement: Rationale for modifications to procurement policies for: <ul style="list-style-type: none"> Vertical and horizontal development Purposeful solutions Innovation partner for broader site beyond Quayside 				
		Intellectual Property: Outlines the parameters of the: <ul style="list-style-type: none"> Purposeful solutions Process for establishing IP Ownership/sharing ownership of IP Sharing of IP revenues Governance 				

*For example: mandate letter, existing program or identified frameworks/strategy, Budget announcement, Annual departmental plan



The IDEA District

Proposal

As part of the MIDP, SWL proposes the creation of a 190-acre Innovative Design and Economic Acceleration (IDEA) District, of which Quayside (12 acres) and Villiers West (20 acres) are proposed to be the first incremental steps. The IDEA District presumes a governance model and phased approach that would be subject to government approvals. Core elements of the IDEA District include:

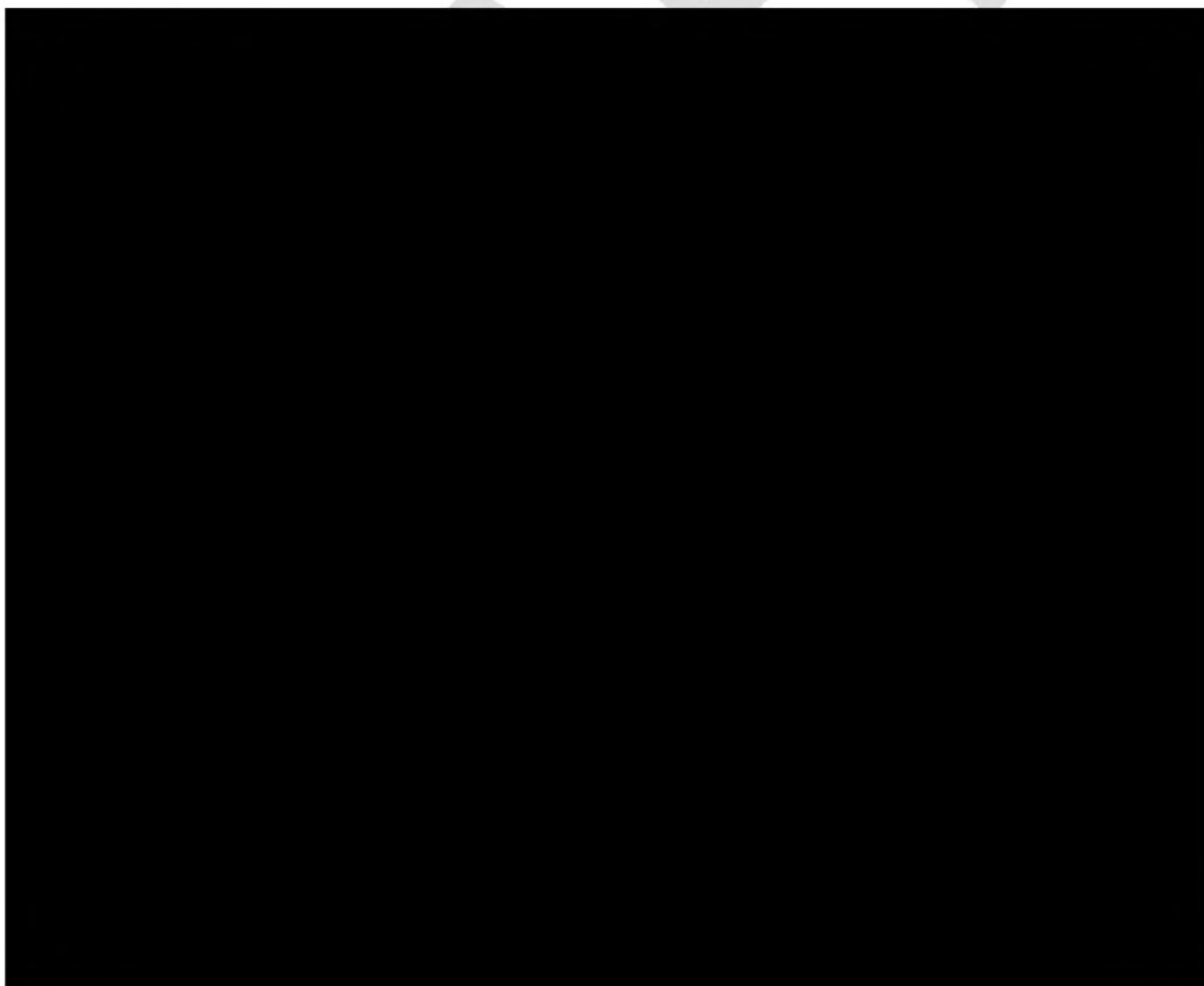
- The **Public Administrator**, supported by several new entities, including a:
 - Waterfront Transportation Management Association (WTMA);
 - Waterfront Sustainability Association (WSA);
 - Waterfront Housing Trust;
 - Open Space Alliance (OSA); and,
 - Urban Data Trust
- An **Innovation Framework**, being a modified regulatory framework that would apply incrementally across the IDEA District, subject to meeting certain project milestones. The Framework would consist of:
 - Certain adjustments to legal and regulatory requirements necessary to implement the MIDP (e.g. Building Code), and;
 - Innovation Design Standards and Guidelines (IDSGs): a set of evolving requirements that would guide development with the goal of meeting Waterfront Toronto's and the project objectives.
- **Financing Mechanisms** that would comprise changes to Development Charges, land value reductions, and Tax Increment Financing (TIF).

Overall Federal Impact/Interest	
Policy/Program	
Legislative	

Fiscal
Tri- government
Governance
OGD interest

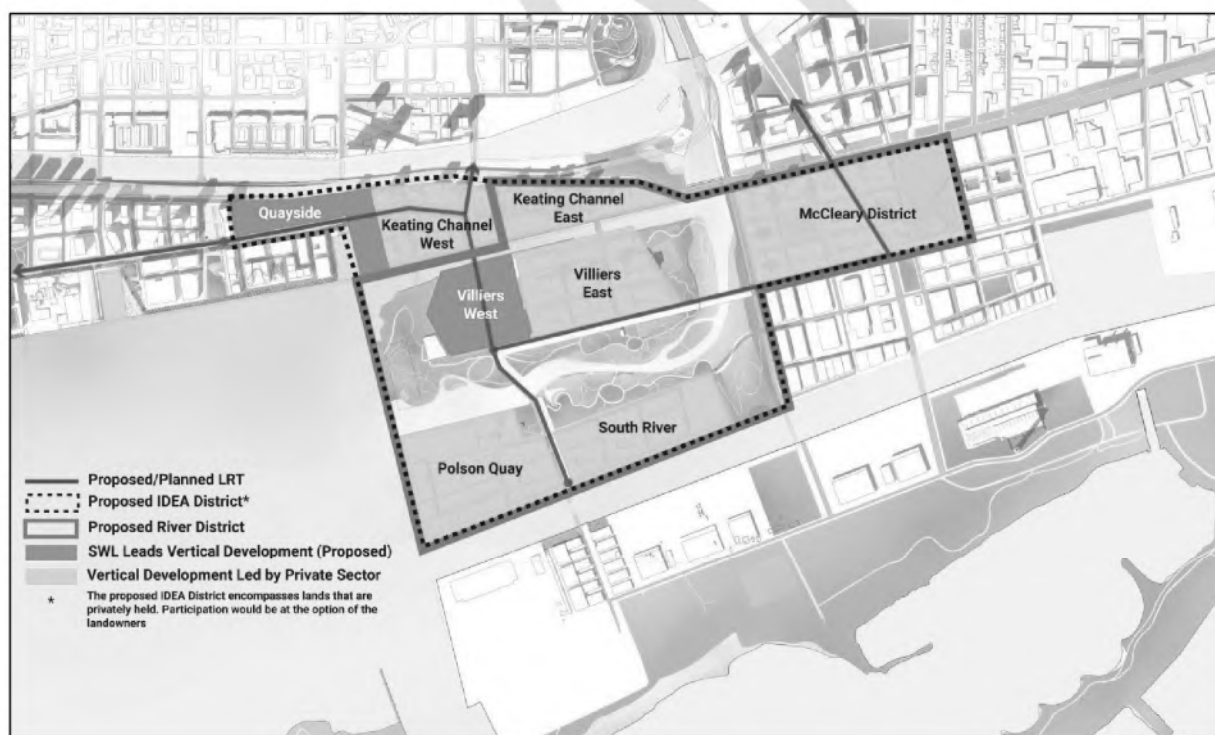


Considerations

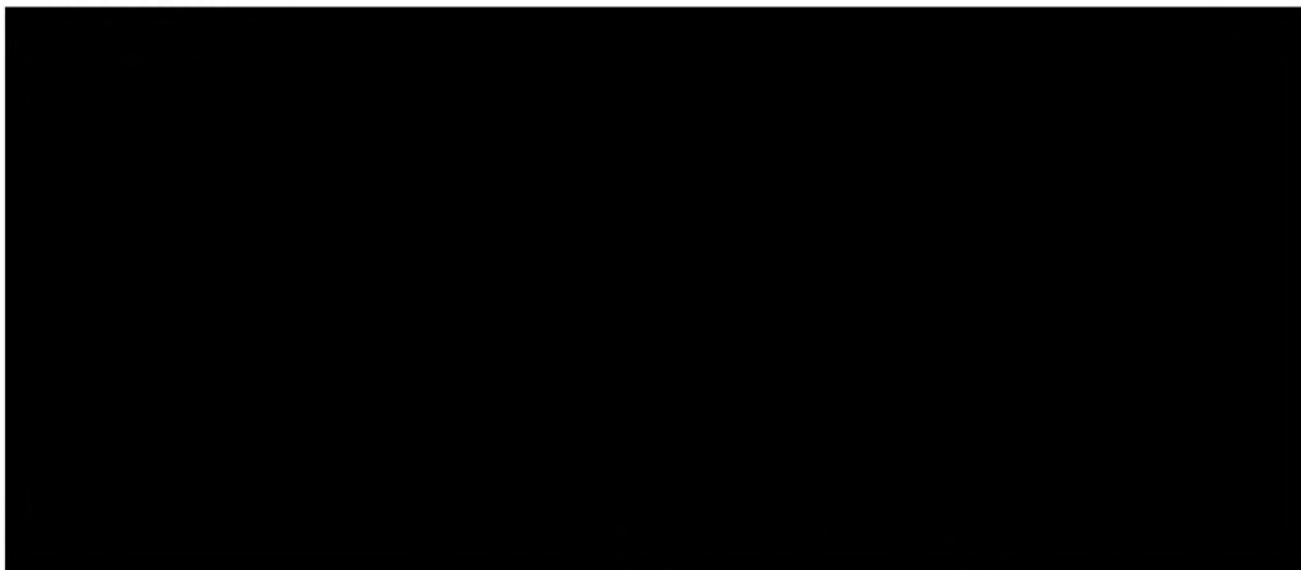


Financing Mechanisms

Figure 1: Sidewalk Labs' Proposed Project Area:



Key Messages





Intellectual Property






Proposal

Sidewalk Labs has proposed **sharing proceeds** with the “public sector”, including with Waterfront Toronto, from certain products or other solutions (dubbed “**testbed-enabled solutions**”) that would not have been developed outside of the opportunities created by the project. The proposed profit-sharing arrangement from these **testbed-enabled solutions** would be subject to **certain conditions**, which would be deemed to be met on a case-by-case basis as outlined in downstream Principle Implementation Agreements. These agreements would establish a process through which

Eligibility for a product or solution to classify as testbed-enabled, for the purposes of profit-sharing is based on the following criteria:

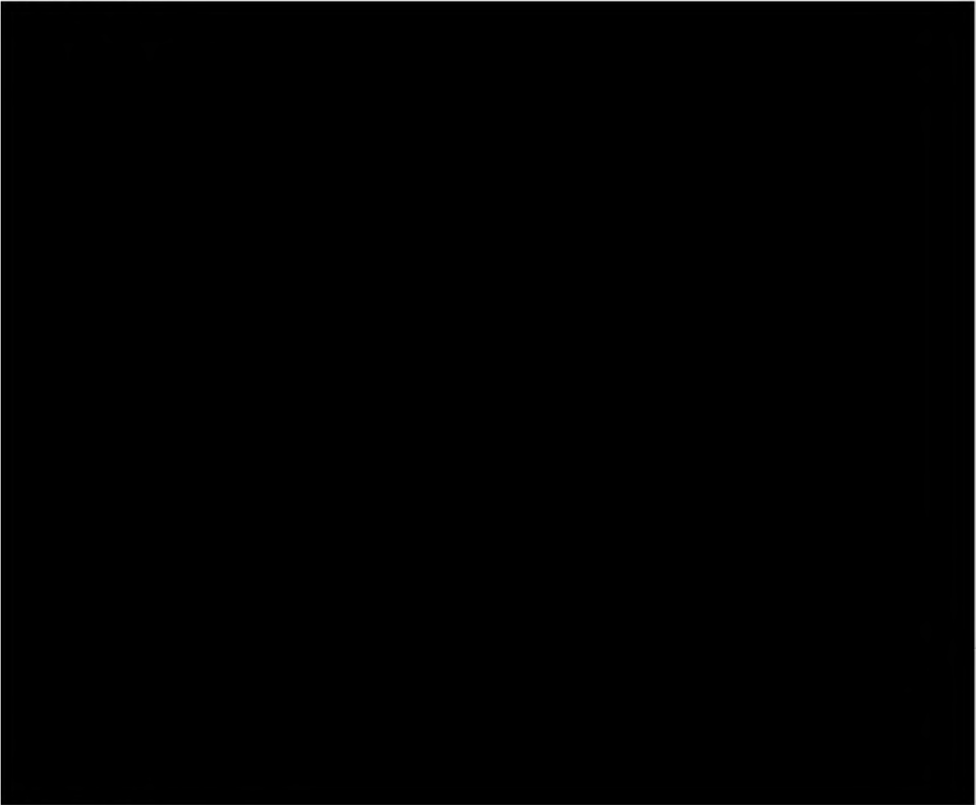
1. Sidewalk Labs must use the Toronto project geography in the first deployment of the product or other solution at scale; and
2. The relevant public stakeholders must create the testbed conditions that Sidewalk Labs needs to effectively pilot and scale the new product or solution, specifically by providing (as applicable):
 - a. Access to physical spaces (e.g., mounting sensors, roads, etc.);
 - b. An ability to set software standards (e.g., all building access systems must use a common standard);
 - c. Regulatory conditions that support the physical, digital, and operating conditions required;
 - d. Sufficient scale for efficacy or to otherwise achieve desired outcomes; and
 - e. An ecosystem that provides the opportunity to integrate all these conditions simultaneously.

Sidewalk Labs has even proposed making a “patent pledge” which would enable any entity wishing to build on Sidewalk Labs’ Canadian patents to do so without fear of litigation of patent infringement.

Overall Federal Impact/Interest 		
Policy/Program		Comment....
Legislative		Comment....
Fiscal		Comment....
Shared tri-gov		Comment....

Governance		Comment....
OGD interest		ISED, Office of the Privacy Commissioner

Initial view



Key Messages








- 3-4 key messages
- ...
- ...



Digital Innovation and Data Governance: Urban Data Collective

Proposal

The Digital Innovation chapter describes the foundations for digital tools that can help communities address challenges and improve services, while creating the open conditions for innovation. The bulk of the chapter is focused on a new framework for Responsible Data Use that will set a new global standard for protecting personal privacy while encouraging innovation.

Overall Federal Impact/Interest 		
Policy/Program		Comment....
Legislative		Comment....
Fiscal		Comment....
Shared tri-gov		Comment....
Governance		Comment....
OGD interest		ISED, Office of the Privacy Commissioner

Initial view

Crisp summary of initial views, including from subject matter experts regarding, e.g., practicality/feasibility of proposal, innovative nature, key considerations, etc

Key Messages

- 3-4 key messages
- ...
- ...

DRAFT FOR DISCUSSION ONLY



Digital Innovation and Data Governance: Privacy

Proposal

The MIDP proposes developing a network of digital infrastructure which would encourage new digital tools, demonstration spaces, project testbeds and industry-academic partnerships. However, open source software code and flexible standardized mounting infrastructure, such as the Koala™ Universal Mount, that would facilitate the safe, fast and inexpensive installation of digital hardware such as Wi-Fi access points, cellular nodes, environmental sensors, and traffic or public safety cameras.

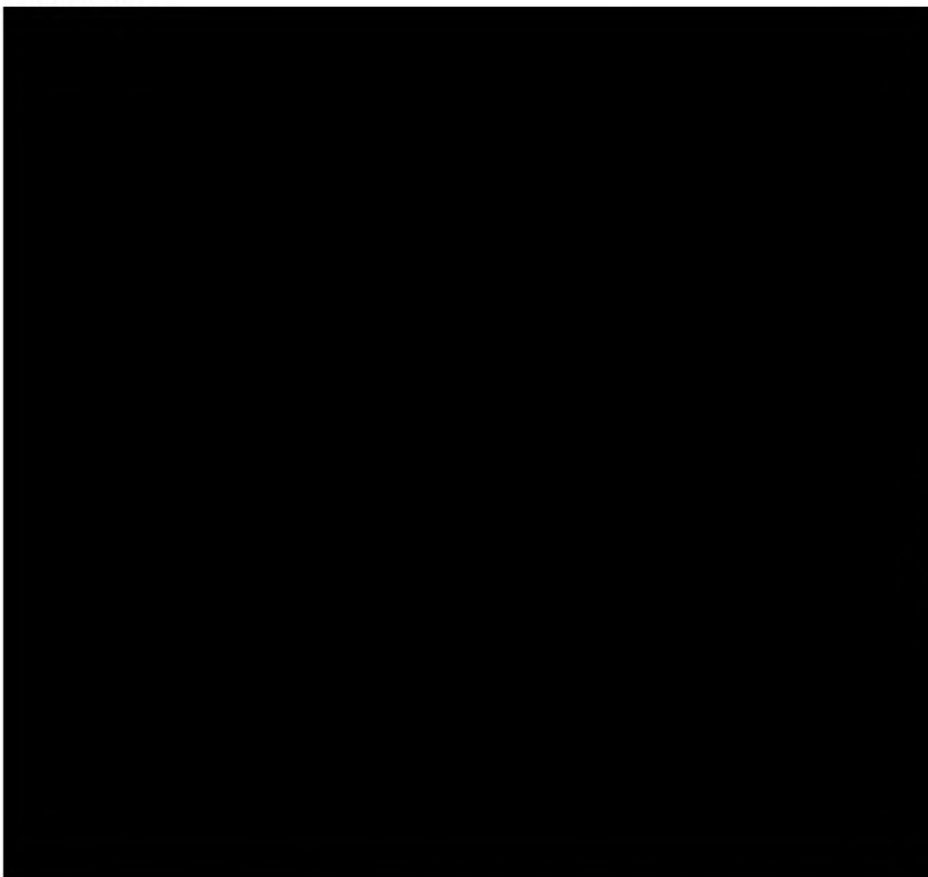
These digital tools and technology-enabled urban innovations would require the collection of what Sidewalk Labs refers to as “urban data”¹. To address the data governance issues this may raise, Sidewalk proposes a new framework for Responsible Data Use (RDU) that would set a new global standard for protecting personal privacy while encouraging innovation. These RDU guidelines would be governed by an independent steward/manager of data and digital infrastructure referred to as the “Urban Data Trust” (see: *Urban Data Trust* 2-pager).

Overall Federal Impact/Interest	
Policy/Program	
Legislative	
Fiscal	
Shared tri-gov	
Governance	

¹ Sidewalk defines “urban data” as information gathered in the city’s physical environment, including the public realm, publicly accessible spaces and even some private buildings. (Volume 2, p. 379)

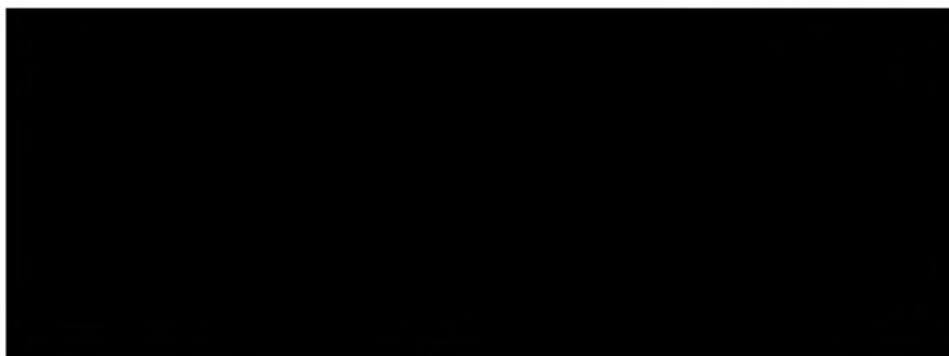
DRAFT FOR DISCUSSION ONLY

OGD interest	✓	<ul style="list-style-type: none">➤ ISED➤ Office of the Privacy Commissioner➤ Office of the Chief Information Officer➤ CRTC➤ Standards Council of Canada

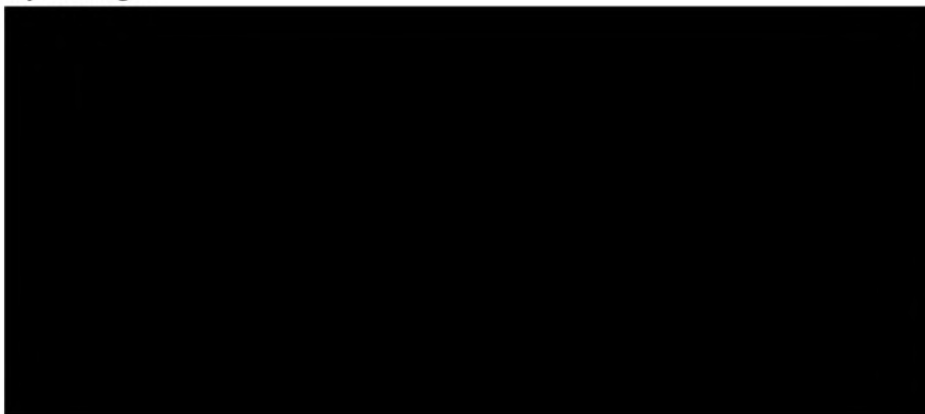
Initial view

² MaRS Discovery District. *A Primer on Civic Digital Trusts*. December 2018. <https://marsdd.gitbook.io/datatrust/>

DRAFT FOR DISCUSSION ONLY



Key Messages





Mobility: Waterfront East Light Rail Transit (LRT)

Proposal

Volume II, Chapter 1 of the Draft Master Innovation and Development Plan (MIDP), "Mobility", includes a key proposal for expedited delivery of **Light Rail Transit (LRT) expansion** to Queens Quay East and Villiers West. The transit component outlines a \$1.1 B plan for the delivery of the LRT in the following three phases: (1) Union Station to Parliament Slip; (2) Parliament Slip to Villiers West; (3) Villiers West to East Harbour.

Funding for Phase 1 (\$675M) would be from traditional public sector funding. Funding for Phase 2 & 3 (\$406M) would come from either traditional public sector funding agreements between the city, provincial, or federal governments, or Tax Increment Financing (TIF) with an optional credit facility of \$100M provided by Sidewalk Labs to cover interest payments.

Overall Federal Impact/Interest	
Policy/Program	
Legislative	
Fiscal	
Tri-government	
Governance	

OGD interest

Considerations

Figure 1: Sidewalk Labs' Proposed Project Area:



**Page 242
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pursuant to paragraph
21(1)(b)
of the *Access to Information Act***

**La page 242
Font l'objet d'une exception totale
conformément à la disposition du paragraphe
21(1)(b)
de la *loi sur l'accès à l'information***



Digital Innovation and Data Governance: Urban Data Trust

Proposal

Sidewalk Labs' proposal focuses on digital tools and technology-enabled innovations which would entail the collection of "urban data". Urban data is defined by Sidewalk Labs as information gathered in the city's physical environment, including the public realm, publicly accessible spaces and even some private buildings¹. It could include personal information as well as information that is not connected to a particular individual.

Sidewalk suggests all urban data collected and used in these spaces be considered a public asset that should not solely benefit the public or private sector. **The MIDP therefore proposes the establishment of an independent Urban Data Trust to manage urban data and make it publicly accessible by default.** The Trust would ensure beneficial collection of data and protection of privacy by abiding by a publicly available charter of standards aligned with key federal legislation, such as PIPEDA and the Privacy Act.

As part of the MIDP, the Trust would also govern Responsible Data Use (RDU) guidelines that would set a new global standard for protecting personal privacy while encouraging innovation. This new framework would aim to address the data governance issues that may raise from Sidewalk Labs' proposed urban innovations.

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Functions

- Establish and apply an accountable and transparent process for approving – or rejecting – any proposed collection and use of urban data
- Enter into contracts with approved data entities, institutions or organizations to govern collection, disclosure, storage, security, analysis, use and destruction of urban data
- Address challenges (e.g., protect against data abuses) and opportunities (e.g., promote data-driven innovations) arising from data use


Governance and Funding

- Overseen by an independent, ~~five~~5-member board comprised of a data governance or IP expert and a representative from the community, public sector, academia and Canadian business industry
- Managed by a Chief Data Officer and guided by ~~Guided by~~ a Data Trust Charter
- Non-profit, funded through a data collection and use administrative fee with possibility of evolving over time into a public-sector or quasi-public sector entity over time

¹ Volume 2, p. 379

Responsible Data Use (RDU) Guidelines and Assessment

- Clear, common standards (guidelines) for responsible data use that would apply to all entities seeking to collect or use urban data
- In-depth application used by Trust to assess purpose of digital proposal, type of urban data to be collected, potential impact on the community, and its risks and benefits

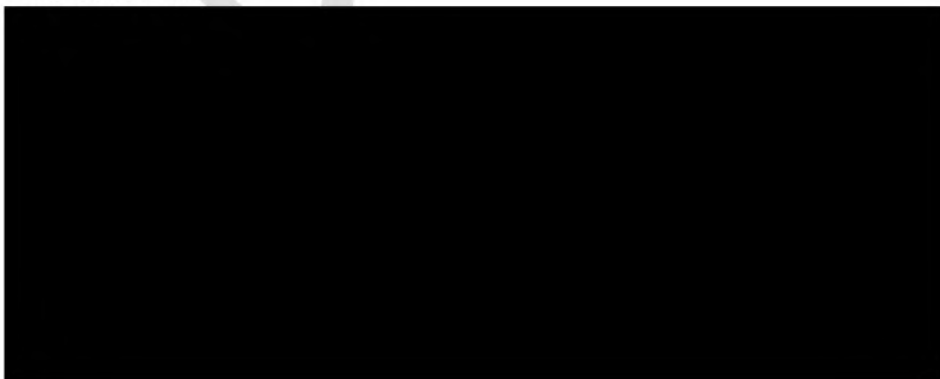
Overall Federal Impact/Interest <input checked="" type="checkbox"/>	
Policy/Program	
Legislative	
Fiscal	
Tri-government	
Governance	
OGD interest	<input checked="" type="checkbox"/> <ul style="list-style-type: none"> ➤ ISED ➤ Office of the Privacy Commissioner ➤ Office of the Chief Information Officer ➤ CRTC ➤ GAC (on the issue of data storage)

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Considerations

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**Pages 245-259
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c), 20(1)(d), 21(1)(a) & 21(1)(b)
of the *Access to Information Act***

**Les pages 245-259
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c), 20(1)(d), 21(1)(a) & 21(1)(b)
de la *loi sur l'accès à l'information***

Intellectual Property and Procurement Proposal

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING
JOSH SIREFMAN | SHAINA DOAR | ALYSSA HARVEY DAWSON | CRAIG NEVILL-MANNING

MAY 13, 2019

INTRODUCTION

Sidewalk Labs Began with a New Vision for Life in Cities

Sidewalk Labs was established with the belief that by integrating forward-thinking urban design and technological solutions we could address urban challenges experienced around the world and fundamentally improve quality of life in cities.

- Sidewalk Labs envisioned new experiences that could be possible in a new type of city across areas like mobility, affordable housing, construction, technology, policy, planning, and governance.
- A common theme emerged—that in many cases, realizing new urban experiences involved utilizing data and technology in new ways.
- Sidewalk Labs recognized that technology could catalyze these solutions. But we also knew that data for data's sake or tech for tech's sake would not improve quality of life.
- And from the outset we knew that the monetization of data would not be part of our business model.

Using Technology to Enable New Urban Experiences

Streets that prioritize safety, pedestrians, and cyclists, because they are designed to anticipate shared, self-driving vehicles that wouldn't need much parking and could communicate with each other and with adaptive traffic lights. This would mean significant amounts of street space given back to pedestrians and cyclists, less congestion, and improved safety.

Buildings with a far more diverse and vibrant mix of uses as a result of "outcome-based code," which doesn't require uniformity of use but rather ensures structural integrity, air quality, and noise levels through conditions-sensing technology.

Significantly reduced carbon emissions achieved by technology that monitors and manages energy demand across the neighbourhood.

...and many more

INTRODUCTION

Using New Solutions to Advance Priority Outcomes

Since partnering with Waterfront Toronto, Sidewalk Labs has focused on identifying and developing a set of technological and urban design solutions designed to address real challenges in Toronto.

The MIDP identifies a range of technological and urban design solutions, each of which has the potential to improve quality of life and help achieve the project objectives.

Waterfront Toronto Priority Outcome/	Examples of Products to Achieve the Outcomes
Job Creation & Economic Development	An open system designed to encourage third party participation and innovation.
Sustainability & Climate Positive Development	Energy demand management technology, thermal heating and cooling, and other innovations to push toward climate positivity.
Housing Affordability	Construction innovation to enable a mix of affordability levels and real-time monitoring of building conditions to enable a mix of uses.
New Mobility	Traffic management technology and adaptive traffic lights to reduce congestion and increase safety.
Urban Innovation (including robust data privacy and digital governance)	Truly ubiquitous connectivity, a universal mount for the urban environment, and focused efforts to improve digital literacy to bridge the digital divide and spur the urban innovation ecosystem.

INTRODUCTION

Designing a Platform for Innovation

Realizing the project objectives at scale cannot be achieved by Sidewalk Labs' alone. That's why the approach proposed in the MIDP focuses on creating the core physical, digital, and policy conditions that together form a platform for innovation on which others can act and experiment.

PHYSICAL ENVIRONMENT

- Built environment is designed to be adaptable and enable rapid innovation
- Dynamic pavement and curbless streets enable greater flexibility in the way roads can be managed
- Open access channels allow for incorporation of new systems as they are developed over time

DIGITAL ARCHITECTURE

- Ubiquitous connectivity, a standardized mount system, and a distributed identity system invite innovation by third parties
- A set of published standards creates a shared foundation for innovators
- An Urban Data Collective could oversee responsible data use and ensure proper protections

POLICY FRAMEWORK

- A public administrator can prioritize innovation without compromising the public interest
- Sidewalk Labs is committed to working with policy-makers to demonstrate how digital capabilities can enable policies to achieve their intended outcomes in more flexible ways, while promoting innovation

A Platform for Innovation: When integrated, these three conditions would create a platform for urban innovation that accelerates the speed of development and magnifies the impact of new services, tools, and products in the IDEA District.

INTRODUCTION

Sidewalk Labs Will Build Solutions—But Not Exclusively

Realization of the MIDP proposals would create the digital conditions necessary to support an open system—one that enables and encourages collaboration and experimentation.

The wide range of technologies that make Quayside unique will be developed and deployed by an ecosystem of many innovators

- Sidewalk Labs envisions an open system in which multiple providers can coexist, and technological solutions can integrate, as long as they agree on standards.
- This will enable a wide range of Canadian startups to innovate more quickly, and use Quayside as a springboard to success.
- All systems collecting or using urban data—whether created by Sidewalk Labs or third parties—will be subject to responsible data use protocols.

Sidewalk Labs' own role in technology deployment is designed to enable this unique ecosystem

- Designing technologies to support the project objectives has allowed Sidewalk Labs to identify infrastructure and services to create a new standard for digital innovation:
 - Ubiquitous connectivity, standardized mounts and power, responsible data use processes, and more.
- The fact that Sidewalk Labs is committing to build these components does not preclude others from deploying technology that improves on, competes with, or replaces them.

An IP and Procurement Proposal to Enable Ongoing Innovation

As part of its Innovation and Funding Partnership Proposal, Sidewalk Labs has included a strategy for managing Intellectual Property and Procurement such that the project is able to achieve its ambitious objectives.

Today's discussion will focus on the proposals around Intellectual Property and Procurement that will be included in the MIDP.

- **Sidewalk Labs' Role in Technology Deployment.** Sidewalk Labs will identify or develop key technological solutions for advancing Waterfront Toronto's priority outcomes in the project area.
- **Sidewalk Labs' Product Development Process.** Sidewalk Labs' own process for identifying the limited number of products core to the delivery of the project objectives and for which we are particularly well-suited to develop.
- **Sidewalk Labs' Urban Products.** Products Sidewalk Labs is investing R&D into and commercializing.
- **Purposeful Solutions.** A limited set of innovations that are necessary to achieve agreed-upon project goals and for which there is no suitable alternative on the market and will proceed through a project-specific, direct award process.
- **Testbed-Enabled Technology.** First-of-its-kind value sharing with the public sector for certain solutions that would not have been developed but for the opportunity created by the project.
- **Patent Pledge.** Sidewalk Labs is making a pledge to support the growth of Canada's local innovation ecosystem and enable the development of Canadian IP.

PART 1

Sidewalk Labs' Role in Technology Deployment

Craig Nevill-Manning
Head of Engineering

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PART 1: SIDEWALK LABS' PROPOSED ROLE IN TECHNOLOGY DEPLOYMENT

Five Proposed Roles for Sidewalk Labs

Each of the roles contemplated as part of the Innovation and Funding Partnership is designed to leverage Sidewalk Labs' capabilities and expertise to support the Public Administrator and enable the project to achieve the shared objectives of Sidewalk Labs and Waterfront Toronto.

1. Innovation Planning, Design, and Implementation
2. Economic Development Catalyzation
3. Development of Real Estate and Advanced Systems
4. Technology Deployment
5. OPTIONAL Enabling Infrastructure Financing

Waterfront Toronto's RFP Sought a Partner To:

- "Create and fund a globally significant community that will showcase advanced technologies, building materials, sustainable practices and innovative business models."
- "Deliver key economic and social benefits that enable Toronto to compete effectively with other top-tier global cities for investment, jobs and talent."
- "Further Waterfront Toronto's employment and economic development objectives by providing an environment in which an urban innovation cluster can be established and thrive. Demonstration spaces, project testbeds, and industry-academic partnerships will be leveraged to accelerate the growth of this important cluster."
- "Establish a complete community that emphasizes quality of place, and provides a range of housing types for families of all sizes and income levels within a robust mix of uses, including public open space, culture, recreation, vibrant retail, education-related activities and offices."
- "Government funding is constrained and there exists a large list of competing infrastructure projects. In collaboration with the private, public and not-for-profit sectors, Waterfront Toronto must seek out new and innovative partnerships, funding and investment models that enable our projects, address our goals and recognize and mitigate diminishing government funds."

PART 1: SIDEWALK LABS' PROPOSED ROLE IN TECHNOLOGY DEPLOYMENT

Sidewalk Labs' Role in Technology Deployment

Sidewalk Labs would identify or develop key technological solutions for advancing proposals in the MIDP, drawing on a range of solutions, including software, hardware, and other products and services that target urban priorities, from sustainability to affordability.

Sidewalk Labs would survey and evaluate the innovations currently in research, development, or in the marketplace to determine their relevance and applicability to the project.

- **In the majority of circumstances**, the technologies needed to advance the project would be purchased, commissioned, or licensed from existing vendors. For these solutions, Sidewalk Labs' responsibilities would be as a technical advisor and procurement lead to the public administrator.
- **Where a key solution does not yet exist in the market**, Sidewalk Labs is committed to developing it — by identifying appropriate technology partners to carry out the work, by integrating and enhancing existing solutions, or by undertaking the research and development itself to create and test the solution for deployment as part of the project.
 - **Example: Super-PON.** Sidewalk Labs has proposed to work with Waterfront Toronto's broadband partner to develop the first Super-PON internet network in Canada, which would power ubiquitous connectivity in the project area.

PART 2

Sidewalk Labs Product Development

Craig Nevill-Manning
Head of Engineering

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Sidewalk Labs' Three Core Business Areas

Over the past few weeks, we have discussed three core areas of business that have come into focus since Sidewalk Labs launched in 2015.

REAL ESTATE

Utilization of the knowledge gained, and ideas validated in our explorations, to enable currently counter market programmatic decisions and add value to real estate projects.

IF SUCCESSFUL...

Sidewalk Labs would consider both investing in projects and partnering with others to develop projects around the world.

TECHNOLOGY

Investment in a limited number of products core to the delivery of our objectives and for which we are particularly well-suited to develop.

IF SUCCESSFUL...

Sidewalk Labs would plan to sell these products to cities, municipalities, and developments around the world.

INFRASTRUCTURE

Creation of a company, funded by both ABC and other investors, to fill a gap in the infrastructure capital markets and develop innovative systems on the cutting-edge of the battle to combat climate change.

IF SUCCESSFUL...

This Sidewalk Labs company would invest in and help build the next-generation of infrastructure systems around the world.

Sidewalk Labs Products are in Early Stages of Development

Sidewalk Labs is early in the product development cycle, with pre-revenue prototypes, but will be market-ready for Quayside.

While the limited set of Sidewalk Labs' products are in early stages of development, each was designed to help achieve the priority outcomes established for the project and are expected to be market-ready for Quayside.

Early stage:

- A few products are in the prototype stage but most are still in the customer discovery stage
- We are pre-revenue on all products
- We haven't settled in on a specific business model
- We are creating a product roadmap that allows us to begin testing Minimum Viable Products (MVPs) or components of products within the year
- Our product development team is distinct from that of Google and other Alphabet companies, unable to draw upon their individuals, data, or IP

Criteria for project selection:

- Required to radically improve the quality of life (example: climate positivity)
- Total addressable market is large (example: number of parking spots)
- Not currently in the market
- We are uniquely positioned to build (and represent a current market gap due to government risks or time horizon)

PART 2: SIDEWALK LABS PRODUCT DEVELOPMENT

Digital Product Philosophy

**Radically
improve
the quality
of urban life
by using digital
technology.**

13

Digital Product Philosophy

Radically
improve
the quality
of urban life
by using digital
technology.

- Incremental improvements will likely happen without us. We are focused on step-change improvements that nobody else is.

Self-explanatory.

That's the key -- it's about people's lives as they're lived in cities.

Buying existing technology, partnering with other companies to adapt or improve existing technology, or building technology from scratch if necessary.

The digital products team is not focused on physical construction, infrastructure, materials, etc.

Digital software and hardware.

PART 2: SIDEWALK LABS PRODUCT DEVELOPMENT

Digital Product Philosophy

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PART 2: SIDEWALK LABS PRODUCT DEVELOPMENT

Digital Product Philosophy

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Digital software and hardware.

Principles Guiding Product Deployment

Regardless of whether Sidewalk Labs provides a given technology or sources it from the market, Sidewalk Labs would apply several important principles.

Enable innovation by third parties

Support collaboration with third parties, particularly local players. Implementation Agreements would be designed to support Canada's capacity to build and retain IP locally.

Incorporate privacy from the start

Integrate privacy considerations from the outset. All technology deployed in the project area would adhere to responsible data use guidelines.

Promote open standards

Promote open technology standards and modularity by developing products that adopt open technology standards and modularity, and recommending or sourcing products from third parties that conform to the same principles.

Push the envelope

As long as the principles above are satisfied, buy or build technology that will most significantly, safely, and cost-effectively improve quality of life.

Digital Product Philosophy

How we work as an organization

Technologists (product, design, engineering) work hand in hand with our urbanist domain expert counterparts (mobility, sustainability, buildings, etc.) to create plans for product that are desirable, feasible, and viable.

Draft for discussion purposes only

DOMAIN EXPERTS

Share expertise on urban space, set vision

Foster product discovery & process

PRODUCT & DESIGN

Share clear product roadmaps

Inform plan and build/deliver

ENGINEERING

For illustrative purposes

22

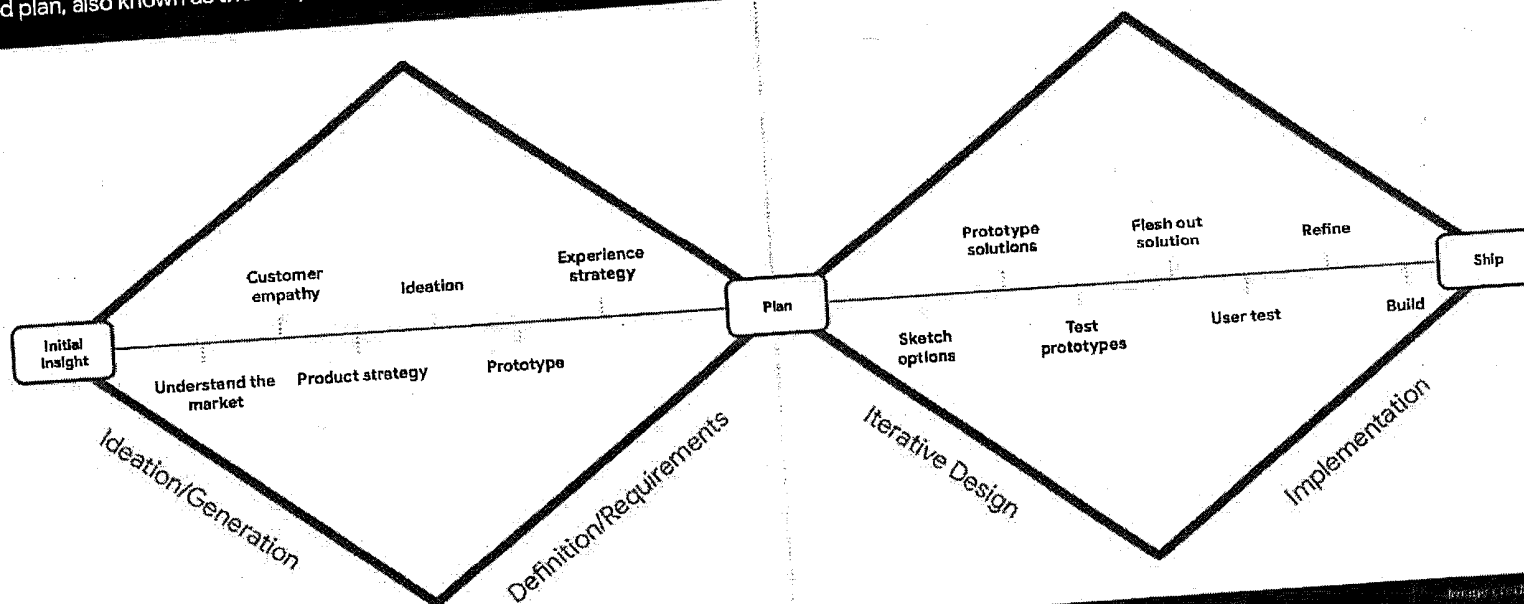
A Look at Product Development in Two Modes

Discovery

Strategy and plan, also known as the "why" and "what"?

Delivery

Working through tradeoffs to deliver the optimal solution, aka "what" and "how"?



For illustrative purposes

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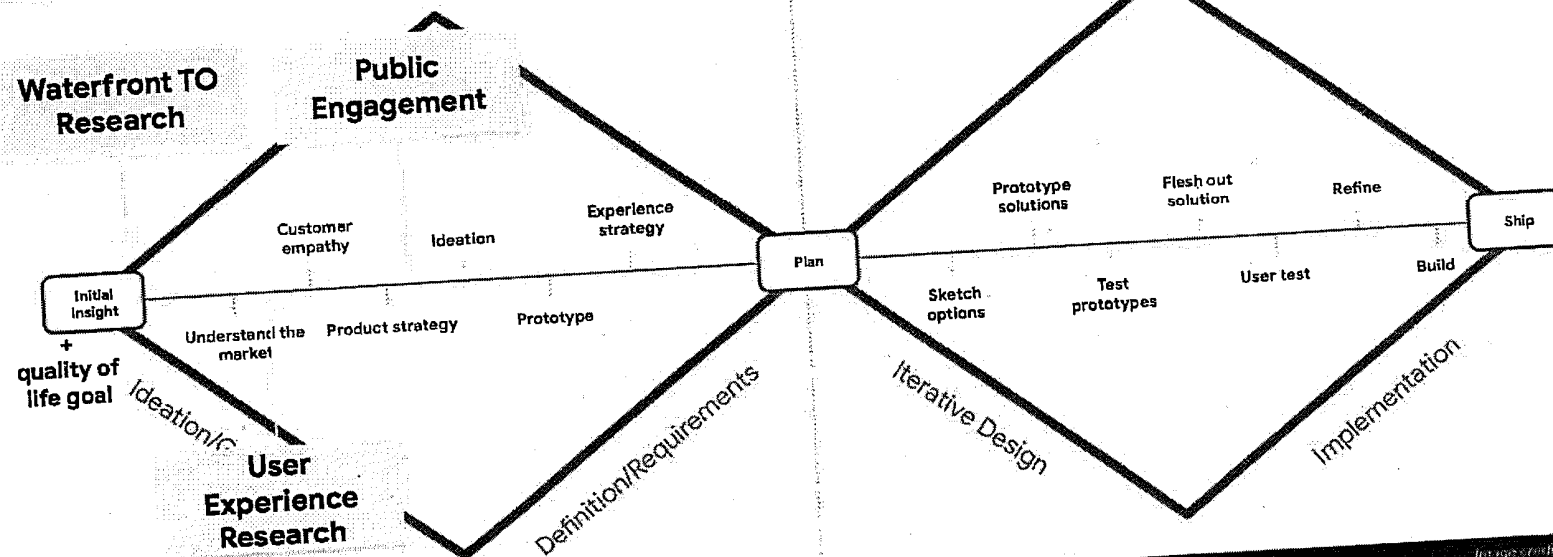
Drawing from Discovery Inputs

Discovery

Strategy and plan, also known as the "why" and "what"?

Delivery

Working through tradeoffs to deliver the optimal solution, aka "what" and "how"?



Inspired by Peter Marlow's

For illustrative purposes

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PART 2: SIDEWALK LABS PRODUCT DEVELOPMENT

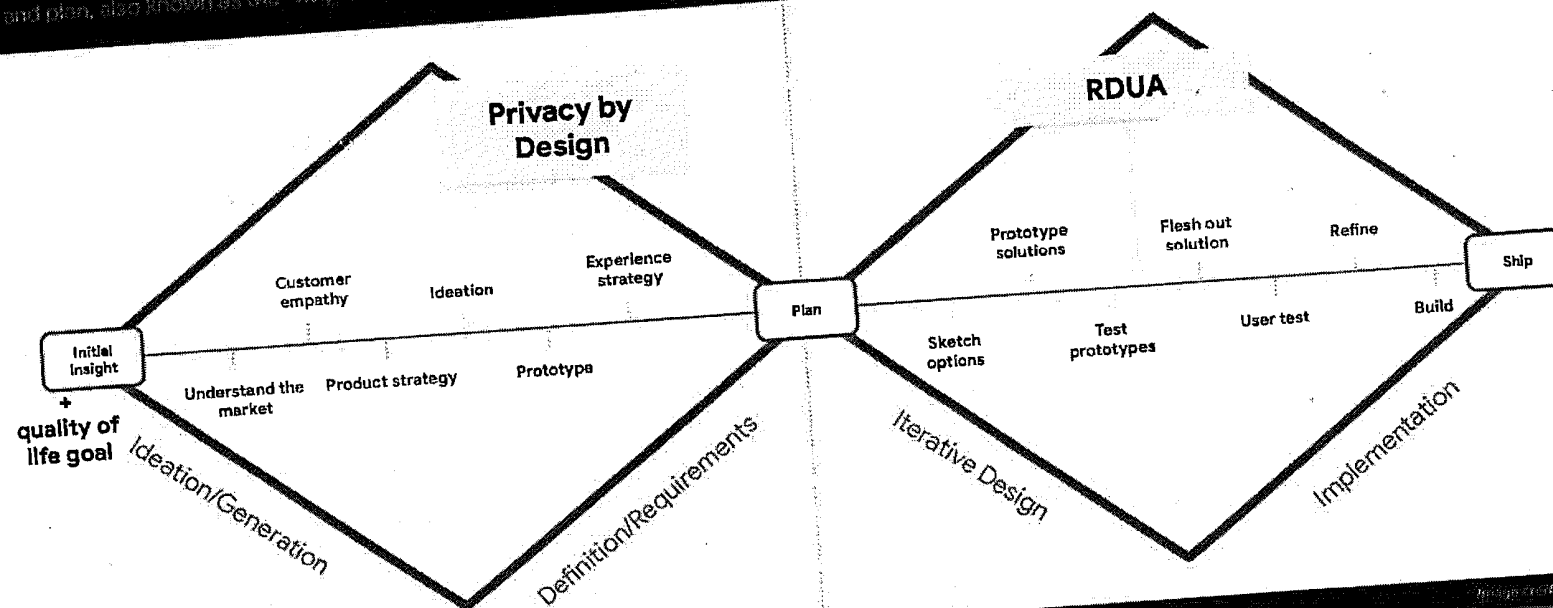
Privacy is Integrated Throughout

Discovery

Strategy and plan, also known as the "why" and "what"?

Delivery

Working through tradeoffs to deliver the optimal solution, aka "what" and "how"?



For illustrative purposes

PART 3

Sidewalk Labs' Urban Products

Craig Nevill-Manning
Head of Engineering

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Product Categories Considered in the MIDP

As Sidewalk Labs considers commercialization of required technologies, three categories can help distinguish the differentiated paths to developing and commercializing the products.

CATEGORY

1

Sidewalk Labs' urban products in development

- Meet Criteria for Product Selection and are being invested in for R&D now and commercialization in the future
- The MIDP reflects a vision for the product, but the actual components may change over time based on development of minimum viable products and ongoing iteration and prototyping (in testbed conditions)

2

Technologies that are required to meet stated MIDP goals but are not yet in development

- The MIDP includes product visions for these products, but the actual technical paths to implementation are still being defined and Sidewalk Labs teams have yet to be staffed in these areas
- The business plans for these products can take many forms, and not all will become Sidewalk Labs' Urban Products (Category 1). E.g.,
 - Become businesses or generate revenue independently (ex. freight)
 - Generate revenue through unrelated areas such as real estate value (ex. radical mixed-use)
 - Improve the desirability of the area and impact of other solutions (ex. outdoor comfort systems encourage more bike usage)

3

Technologies that will be identified in the future

- Many challenges and related solutions will come to light as Quayside is developed
- The R&D investment and commercialization process will follow the paths of Categories 1&2 above

The majority of products deployed would be Category 3 products and would be supplied by third parties, not built by Sidewalk Labs.

Category 1: Products in Development by Sidewalk Labs

The products that Sidewalk Labs develops require a Venture Capital-like approach.

Achieving success in "Category 1" Products will require the following from Sidewalk Labs:

- Capital, potentially at the magnitude of hundreds of millions of dollars
 - Initial team sizes are quite small and will need to add additional engineering, business development, and operations resourcing.
 - Funding is also needed for testing, hardware, supply chain development and approvals.
- High risk tolerance
 - Sidewalk Labs' products are in early stages of development.
 - A product roadmap allows for testing Minimum Viable Products (MVPs) of components of our systems within the year. During this process, we will need patience for false starts and incorrect paths.
- A test market
 - Waterfront Toronto would provide a testbed environment that combines the conditions for successful piloting: access to place, sufficient scale to demonstrate potential impact, policy and regulatory conditions to support innovation, and support from local stakeholders, among other conditions.
 - In some cases, it may be desirable for Sidewalk Labs to test outside of Toronto, in order to enable faster time to market, access all necessary testbed conditions, develop local willingness for testing, etc.

Category 1 Example: Mobility Management System

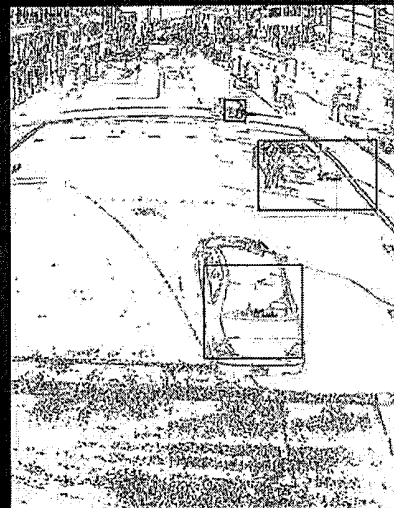
The Mobility Management System coordinates all the roads, signals, lanes, and trip options, ensuring a safe, efficient experience for everyone in line with local city and neighbourhood objectives.

MOBILITY MANAGEMENT

Uses real-time data to manage traffic volume and speed, transit delays, emergency dispatches, and more. Data is either non-personal or de-identified at the source.

Has the potential to adapt to existing modes (cars, bikes, pedestrians, etc.), emerging modes (AVs, scooters), and modes to be identified in the future.

Assess real-time traffic systems



Uses data from traffic cameras, in-pavement detection, and pedestrian detection to gain greater insights into how travelers are using all modes of transportation.

Analyze travel patterns



Uses modeling tools to help the transport system respond to real-time trip patterns, and deep analyses to improve those responses over time.

Influence trip choices

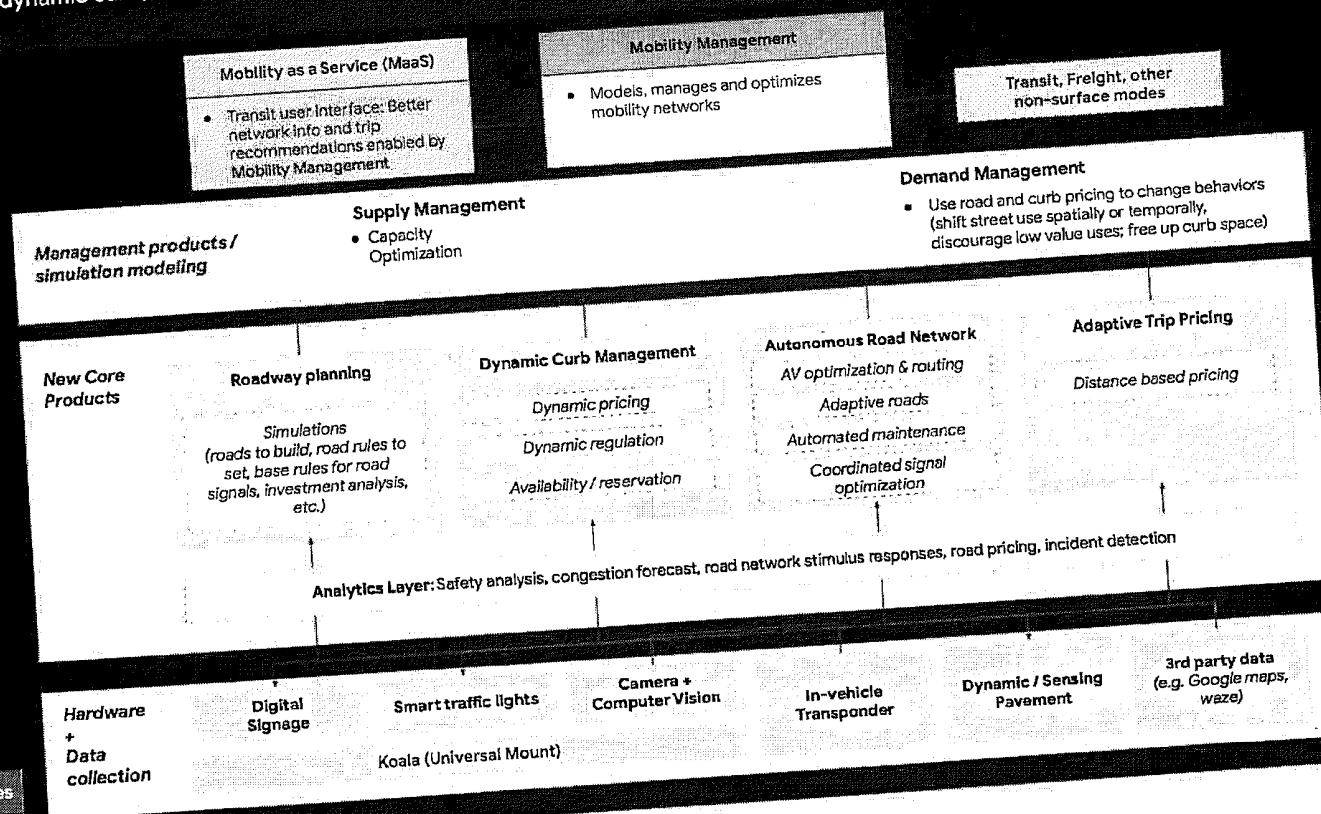


Provides travelers—and the services they use—with information (e.g., street closures, transit arrival times, ride-hail wait times, etc.) to make and adjust trip choices.

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Category 1: Mobility Management System Overview

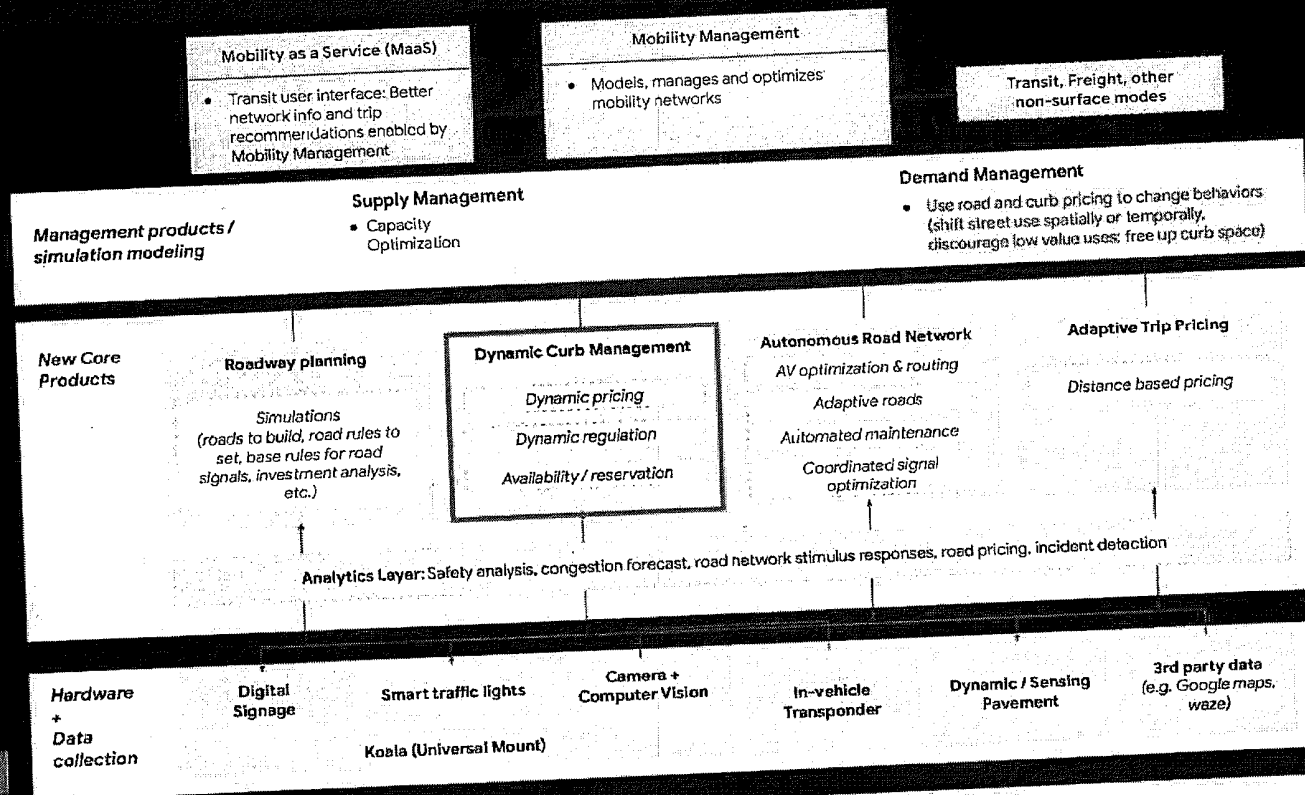
Mobility Management is a suite of products working in concert to optimize outcomes. Some of these Sidewalk Labs will build (e.g., dynamic curb), and some will be outsourced (e.g., camera + computer vision).



For illustrative purposes

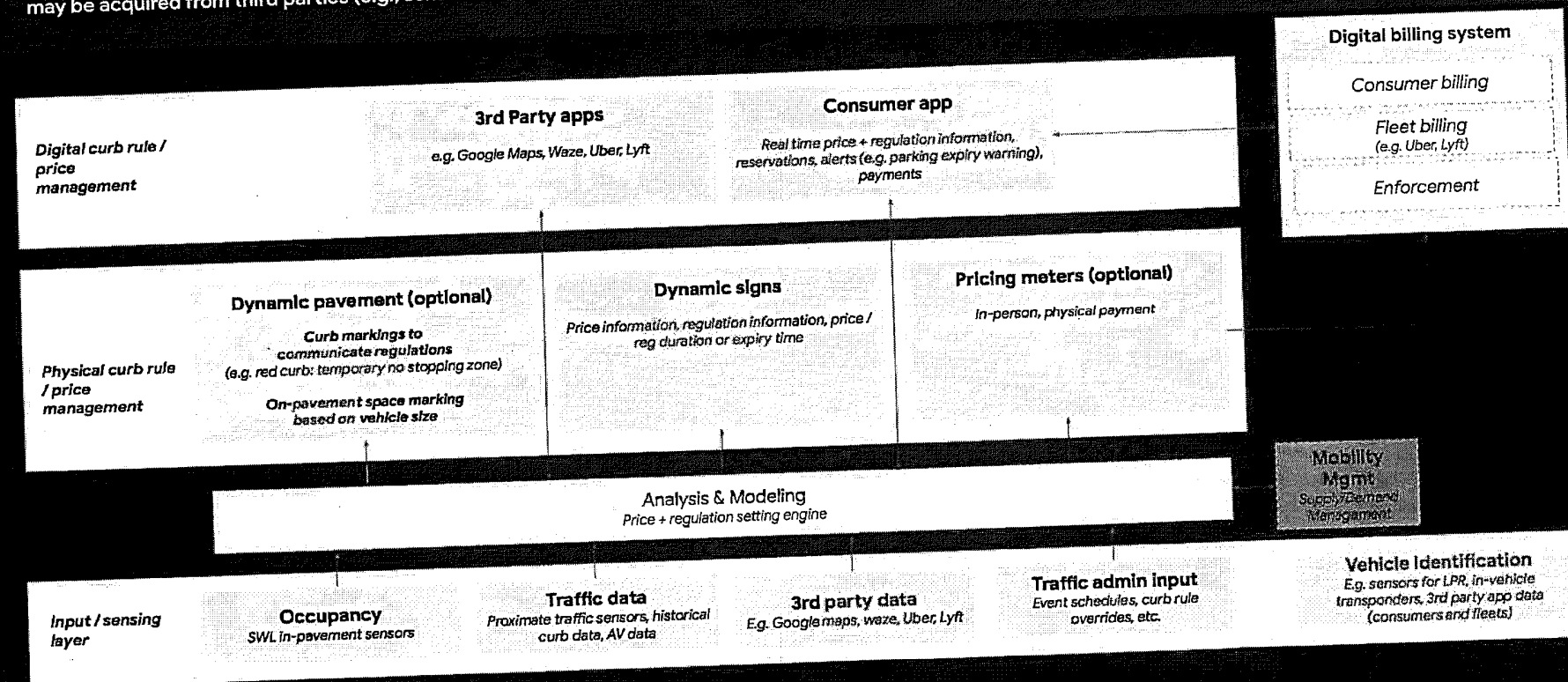
Dynamic Curb Management

The Dynamic Curb is just one component of the Mobility Management system.



Dynamic Curb Overview

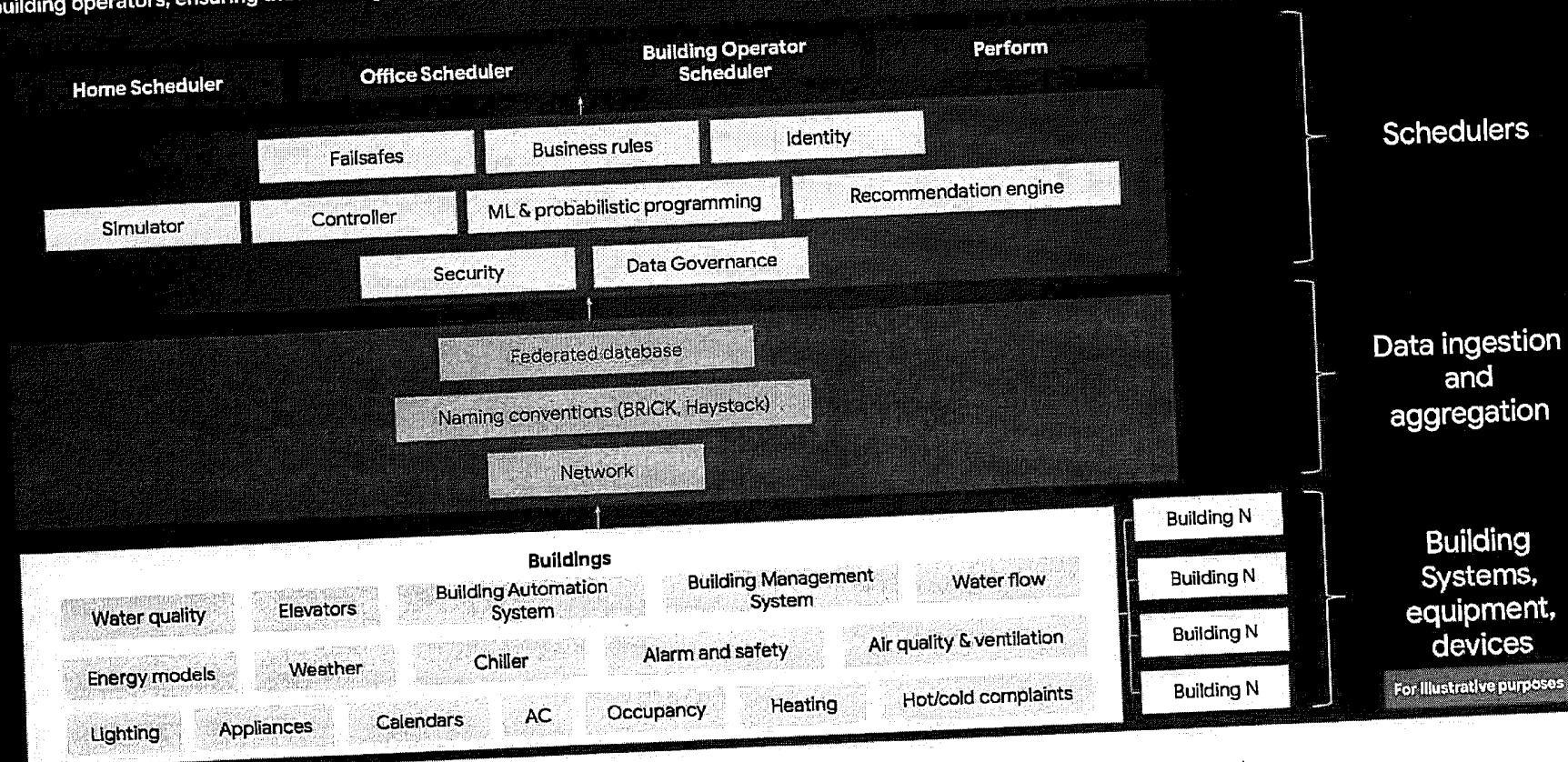
Even the Dynamic Curb is comprised of many individual pieces, many of which may be acquired from third parties (e.g., sensors for vehicle identification).



For illustrative purposes

Category 1 Example: Energy Scheduler Suite Overview

A proposed suite of energy "Schedulers" would actively manage energy systems for residents, businesses, and building operators, ensuring that buildings operate in the most efficient way possible, with many partners.



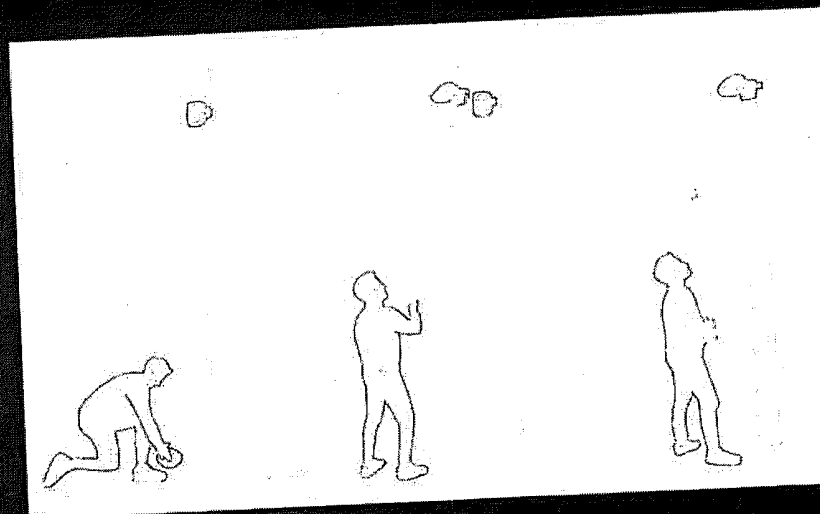
PART 3: SIDEWALK LABS' URBAN PRODUCTS

Category 1 Example: Koala (Standardized Mounts)

Koala is a standardized outdoor mount equipped with power & connectivity that has the potential to reduce the time, cost, and disruption involved in deploying technologies.



Mounting, maintaining, and upgrading signals and sensors is expensive, disruptive and time consuming, which leads to slow adoption cycles for new technology (e.g., lights, Wi-Fi access points, temperature sensors, etc).



Koala—flexible, standardized infrastructure designed to host many types of systems—will function like a USB for the public realm and increase the rate of innovation among a range of third parties.

PART 4

Purposeful Solutions

Shaina Doar
Head of City Operations

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Procurement of Purposeful Solutions

Sidewalk Labs would develop "Purposeful Solutions" in-house—technological innovations that, at the time of development, could objectively and impartially be shown to have no suitable alternative at the same level of maturity or addressing a comparable breadth of solutions to the project needs.

The MIDP includes consideration for Purposeful Solutions—a limited set of innovations that are necessary to achieve agreed-upon project goals and for which there is no suitable alternative on the market.

- Purposeful Solutions would be procured through a project-specific, direct award process
- Designation would last for ten years, after which the solution would be subject to ordinary procurement processes and market prices

Since Sidewalk Labs is so early in its product development, the currently defined set of Purposeful Solutions represent component parts of urban products that are in development by Sidewalk Labs. These component parts will be critical to the success of urban products. Ongoing review will be required to determine if other product component would be considered as Purposeful Solutions.

Purposeful Solutions are Responsive to the Request for Proposals and the Plan Development Agreement

"For solution areas where the Partner has technologies or methodologies that could benefit the Project, a review process will be enacted wherein Waterfront Toronto can be assured of the degree of innovation and the cost-competitive nature of the Partner's proposed solutions prior to the initiation of additional downstream procurement processes."

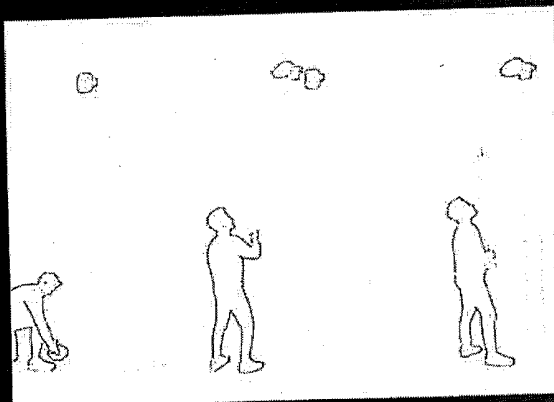
Waterfront Toronto's RFP

"As contemplated by A1.c of the RFP and RFP Submission Materials, the MIDP will identify technological innovations that at the time of their development can objectively and impartially be shown to have no suitable alternatives available in the market ("Purposeful Solutions"), and the Implementation Agreements will generally contemplate competitive procurement processes, with limited exceptions allowing for Sidewalk Labs or its affiliates to provide Purposeful Solutions, but only on a fair and demonstrably arms'-length basis."

Waterfront Toronto and Sidewalk Labs PDA

The MIDP Will Include Three Named Purposeful Solutions

Standardized Mounts, Dynamic Curb, and Perform would be developed by Sidewalk Labs to realize components of its vision and achieve the project objectives.



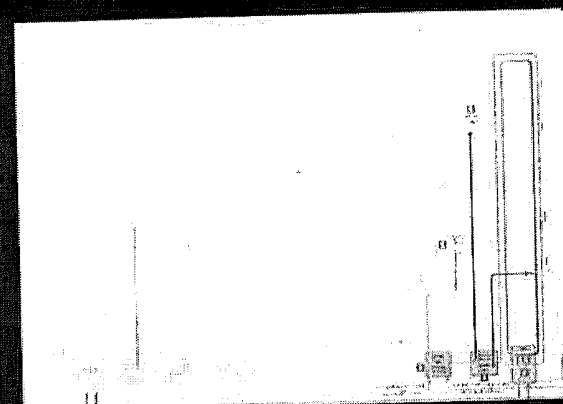
Standardized Mounts (Koala)

A standardized mount system makes it fast, inexpensive, and safe to install a device on a light pole or other street fixture by providing a sturdy physical mount, power, and network connectivity.



Dynamic Curb (Part of Mobility Mgmt)

Incorporates real-time, historical, and projected demand for curbside pick-ups and drop-offs to optimize curb space, dynamically price the curb, assign rates, and set other rules, including pick-up and drop-off locations.



Perform (Part of Energy Schedulers)

Compares a building's near real-time energy usage with an energy budget that adjusts dynamically based on occupancy, the weather, and other factors in order to advance a new outcome-based code.

Identification of Purposeful Solutions in the Future

Sidewalk Labs recognizes that further technological needs are likely to arise as the project progresses. The MIDP will include a proposed review process to designate additional Purposeful Solutions at other times in the life of the project.

STEPS OF THE PROPOSED REVIEW PROCESS:

1. Sidewalk Labs would identify a Purposeful Solution to advance the project goals, either on an unsolicited basis or in response to a request from the public administrator.
2. In a submission to the public administrator, Sidewalk Labs would outline the proposed solution, detail how it meets project objectives, and provide an analysis demonstrating the absence of comparable solutions from the marketplace.
3. Upon receipt, the public administrator may initiate either or both of the following processes to validate a future Purposeful Solution, based on predefined criteria:
 - a. Advance contract award notice
 - b. Independent reviewer

PART 5

Testbed-Enabled Technology

Shaina Doar
Head of City Operations

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Profit-Sharing for "Testbed-Enabled Technology" (1 of 2)

Sidewalk Labs is committed to entering a first-of-its-kind profit-sharing agreement, in which the public sector would receive a portion of the profits arising from certain technologies deployed in the project area if they meet the criteria.

"Testbed-Enabled Technology" refers to products or other solutions that would not have been developed but for the opportunity created by the project.

Such solutions would be subject to a profit-sharing agreement based on a set of classification criteria.

Note: A Purposeful Solution may or may not be considered Testbed-Enabled Technology, and vice versa. The specific tests and goals for these two designations are distinct.

Criteria for Profit-Sharing of Testbed-Enabled Technology

1. The Toronto project geography is used as the first deployment of the product or other solution at scale.
2. The relevant public stakeholders must create the conditions for innovation that Sidewalk Labs needs to effectively pilot and scale the new product or solution:
 - a. Access to mount or deploy the technology in physical spaces (e.g., on lampposts, in roads, as part of new private developments);
 - b. A mandate to use common software standards that enable compatibility and interoperability (e.g., all building access systems must use same open standard);
 - c. Approvals in place upfront and regulatory conditions in place that support the physical, digital and operational conditions required, either directly or through negotiation with appropriate regulator;
 - d. Sufficient scale for efficacy or to otherwise achieve desired outcomes; and
 - e. An ecosystem that provides the opportunity to integrate all the physical, software, and regulatory conditions simultaneously, as necessary for a successful pilot.

Profit-Sharing for “Testbed-Enabled Technology” (2 of 2)

Sidewalk Labs is committed to entering a first-of-its-kind profit-sharing agreement, in which the public sector would receive a portion of the profits arising from certain technologies deployed in the project area if they meet the criteria.

“Testbed-Enabled Technology” refers to products or other solutions that would not have been developed but for the opportunity created by the project.

Such solutions would be subject to a profit-sharing agreement based on a set of classification criteria.

Note: A Purposeful Solution may or may not be considered Testbed-Enabled Technology, and vice versa. The specific tests and goals for these two designations are distinct.

The MIDP Includes a Proposed Profit-Sharing Structure

- Sidewalk Labs proposes that the public sector receive 10 percent of Sidewalk Labs' profits from Testbed-Enabled Technology for a 10-year period
- This period only begins with the sale of the solution to a second customer after its initial deployment in the IDEA District (i.e., when the product has been effectively commercialized)
- Time frame aligns with the standard 10-year time horizon for venture capital fund returns
- The overall approach is structured to align the interests in a successful deployment, with both Sidewalk Labs and the public sector profiting from technologies that prove viable.
- Additional specificity for profit-sharing terms would be negotiated as part of the Implementation Agreements, following release of the MIDP

PART 6

Patent Pledge

Alyssa Harvey Dawson
General Counsel and Head of Legal, Privacy and Data Governance

42

Supporting the Growth of Canada's Innovation Ecosystem

Sidewalk Labs is making a "patent pledge" to enable any startup, non-profit, government agency, or independent entrepreneur to build on Sidewalk Labs' Canadian Patents without fear of litigation or assertion of patent infringement.

- Sidewalk Labs would pledge not to assert its digital innovation-related hardware or software patents issued in Canada ("Canadian Patents") against third parties who develop and sell innovations that utilize such patents, subject to a defensive termination.
- In doing so, Sidewalk Labs hopes to further catalyze the growth of the existing innovation ecosystem in Toronto, supporting the development of Canadian firms and enabling talent and IP developed at the waterfront to contribute back to the local innovation ecosystem.
 - For example, if Sidewalk Labs obtains a Canadian patent for digital mounts, a third party could build and sell a product that practices the claims in the patent without concern that Sidewalk Labs would bring a patent infringement lawsuit related to those claims against the party.
 - Patents would consist of those filed by Sidewalk Labs in Canada covering software or hardware that enable digital innovations in the IDEA District.
 - Sidewalk Labs would list the patents included in the pledge over time and would publish the full content of this pledge on the Sidewalk Toronto website.
 - The only condition is that those taking advantage of the pledge not assert their Canadian patents against Sidewalk Labs or its affiliated companies. While Sidewalk Labs hopes that other innovators will join this pledge over time, it would not be required of technology providers for the Sidewalk Toronto project.

Intellectual Property and Procurement Proposal

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING

JOSH SIREFMAN | SHAINA DOAR | ALYSSA HARVEY DAWSON | CRAIG NEVILL-MANNING

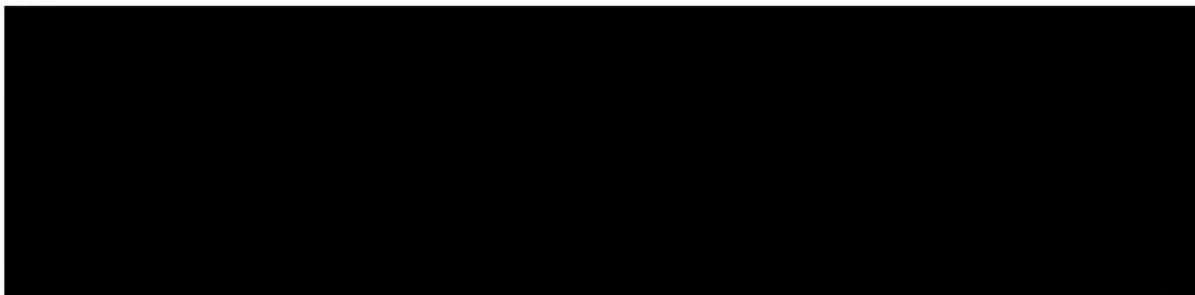
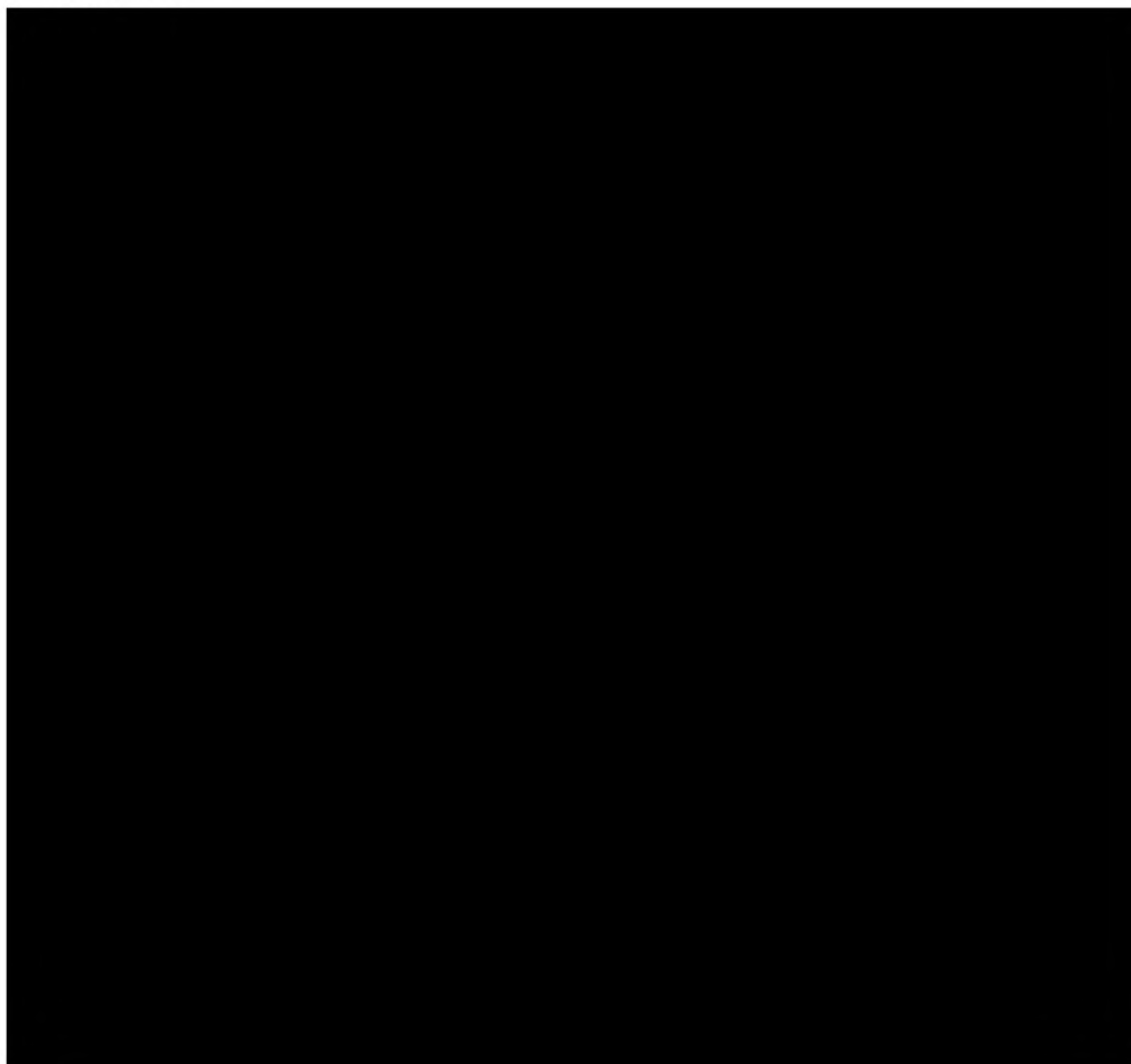
MAY 13, 2019

Appendix: Specific Products Included in the MIDP

The MIDP will include descriptions of several Category 1 and Category 2 products.

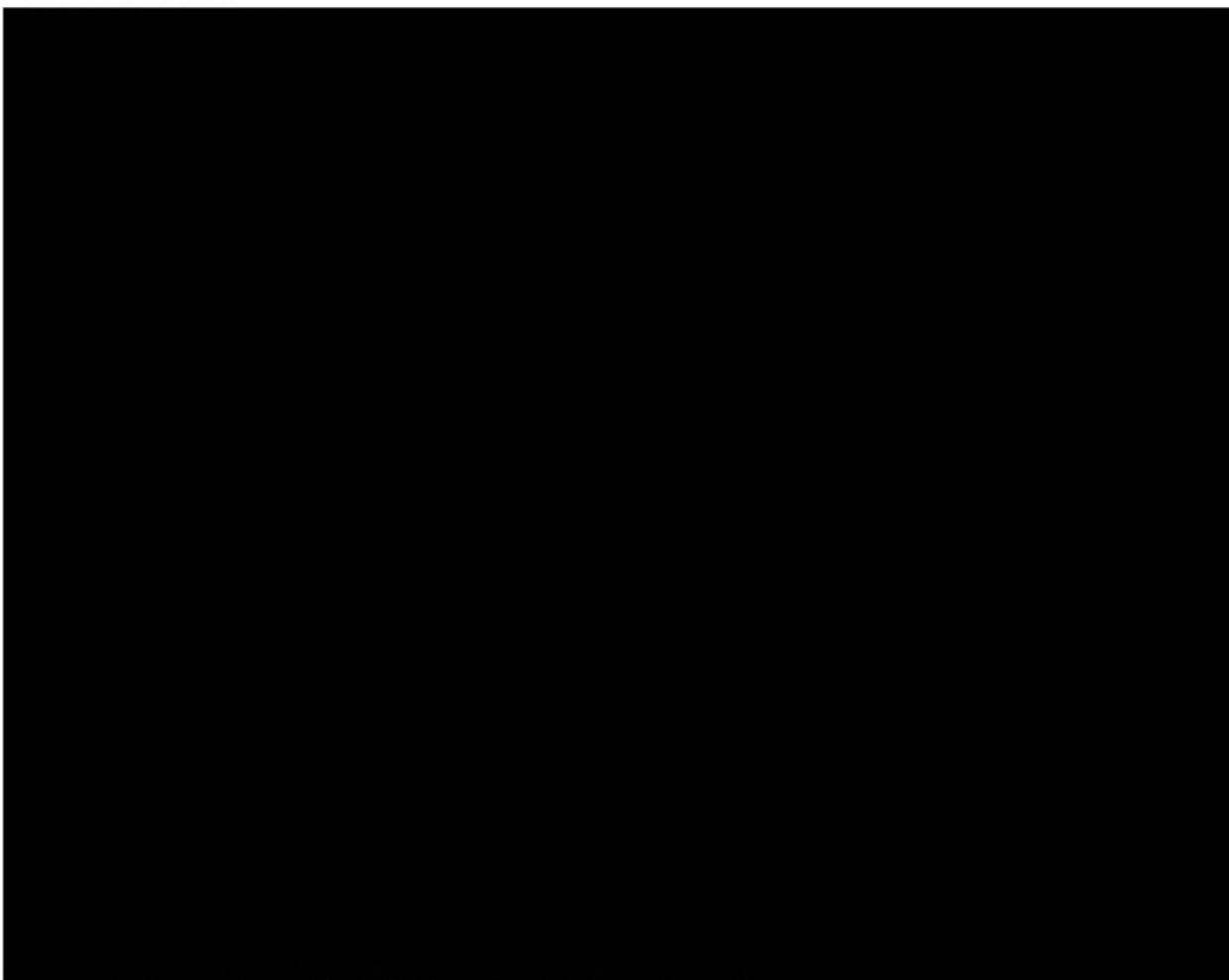
Product	Category	Description
Mobility Management System	Category 1	To reduce congestion and encourage shared trips, the proposed mobility management system would coordinate all travel modes, traffic signals, and street infrastructure, and apply demand-based pricing to curb and parking spaces.
Energy Management System	Category 1	The proposed system of Home, Office, and Building Operator Schedulers would automate energy use to optimize residential, commercial, and building heating, cooling, and electricity systems—reducing energy waste and relying on clean energy while increasing tenant comfort.
Outdoor Comfort System	Category 2	A proposed system of outdoor-comfort tools, deployed in real-time, could dramatically increase the amount of time it is comfortable outside, including building “raincoats” to block rain, awnings to provide shade, and fanshells to provide group cover.
Flexible Retail Platform	Category 2	A proposed leasing platform called Seed Space would help small businesses and other retailers book a wide range of ground-floor space sizes, from anchor-tenant spaces to micro stalls, for short- or long-term uses.
Public Realm Maintenance Map	Category 2	A proposed real-time map of public realm assets—from park benches to drinking fountains to landscaped gardens—would enable proactive maintenance and keep spaces in good condition.
Open Space Usage and Management	Category 2	A proposed digital application called CommonSpace (created with the local organization Park People and the Gehl Institute) would make it substantially easier, faster, and less expensive to collect more reliable data on how people use public spaces—helping park operators better respond to community needs.
Civic Engagement	Category 2	A proposed digital application called Collab (prototyped with local communities and Digital Public Square, a non-profit spun-out of the University of Toronto) would aim to engage community members in local decisions that could shape their neighbourhood, such as programming in a central public space, through a transparent process that reveals the decision-making framework and all community inputs. (Try the prototype at collab.sidewalklabs.com).
Outcome-Based Building Code	Category 2	This proposed real-time building code system could monitor noise, nuisances, and structural integrity to help a mix of uses thrive without sacrificing public safety or comfort.
Building Waste Management System	Category 2	To help divert landfill waste, a proposed program of responsive digital signage would help residents and businesses sort their trash, recyclables, and organics (foods) by illustrating common sorting mistakes. “Pay-as-you-throw” waste chutes would support this recycling program while helping to reduce overall waste.
Active Stormwater Management	Category 2	A proposed active stormwater system would rely on green infrastructure and digital sensors to retain stormwater, reuse it for irrigation, and empty storage containers in advance of a storm to avoid combined sewer overflow.

May 13, 2019

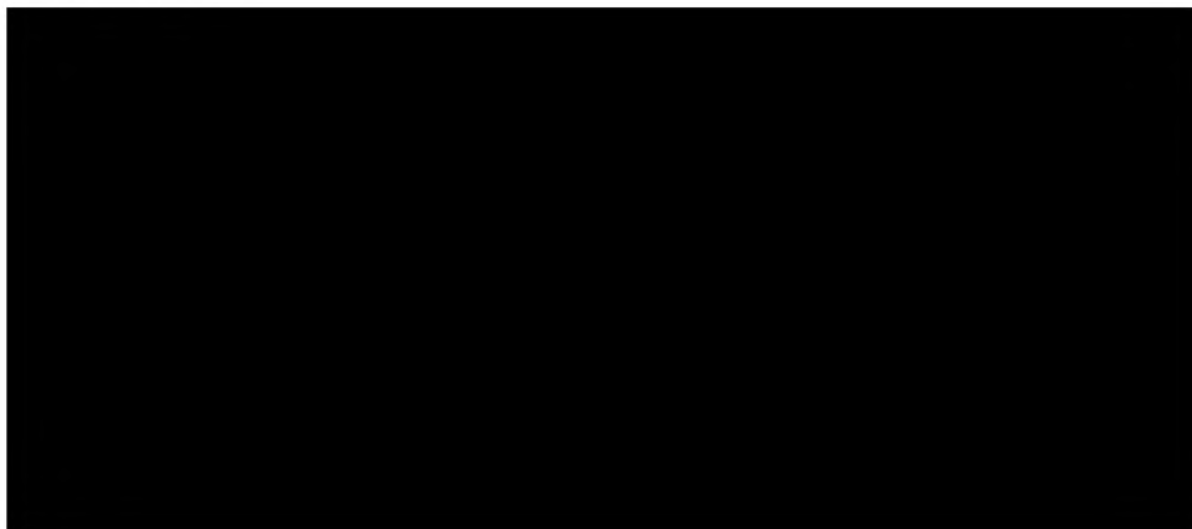
MIDP: Volume III Call**IP****Procurement**

May 13, 2019

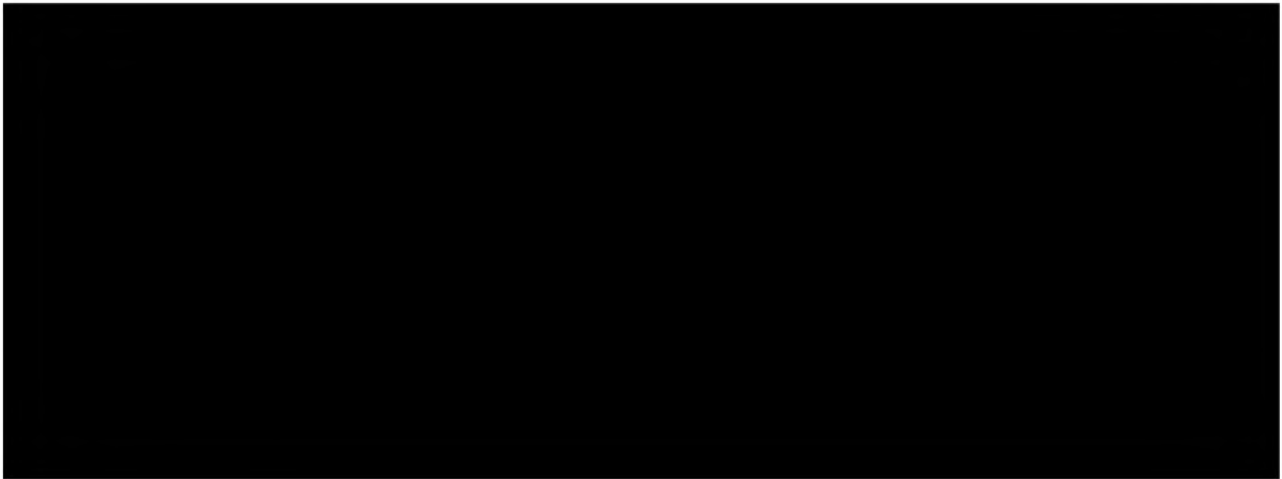
SWL Presentation



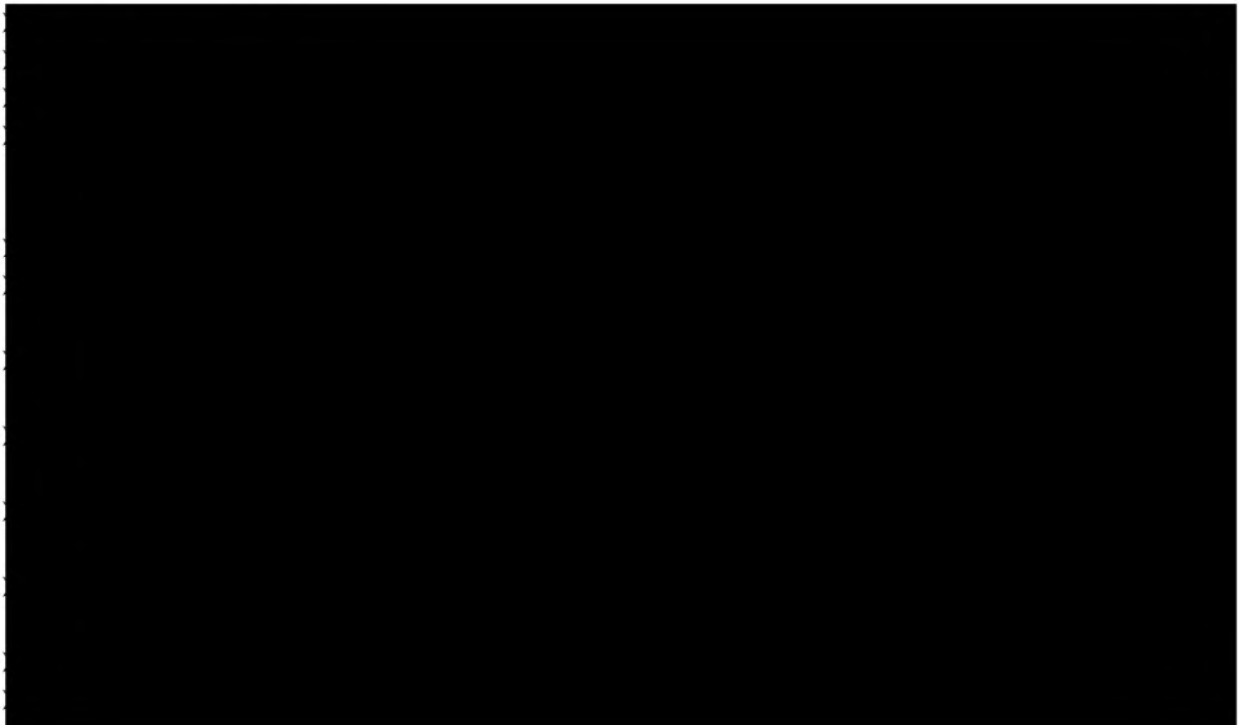
Patent pledges



May 13, 2019



WT & Governments Only



Briefing on MIDP Intellectual Property and Procurement Proposals

May 13, 2019 9:00 AM – 2:00 PM

-

-

IP Discussion

Procurement Discussion

Outcomes/Next Steps

**Pages 309-328
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c) & 20(1)(d)
of the *Access to Information Act***

**Les pages 309-328
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c) & 20(1)(d)
de la *loi sur l'accès à l'information***

A SIDEWALK LABS PROJECT

1 Introduction to the MIDP (Master Innovation Development Plan)

2 Quayside

3 Why Is Scale Important?

4 Proposed Roles & Responsibilities

5 What Outcomes Are Possible?

1 Introduction to the MIDP (Master Innovation Development Plan)

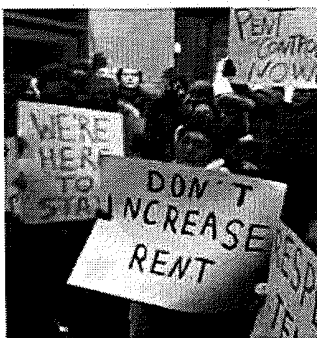
2. Overview

3. Why is Scale Important?

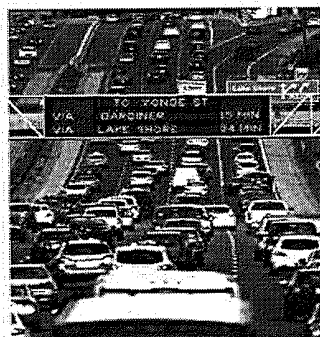
4. Proposed Roles & Responsibilities

5. What Outcomes Are Possible?

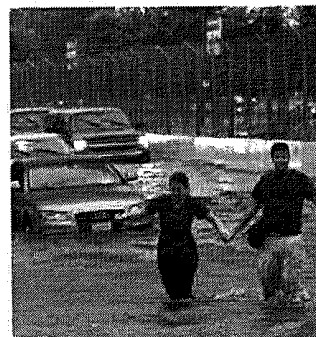
Toronto and other rapidly growing metros from around the world face increasingly difficult quality-of-life challenges.



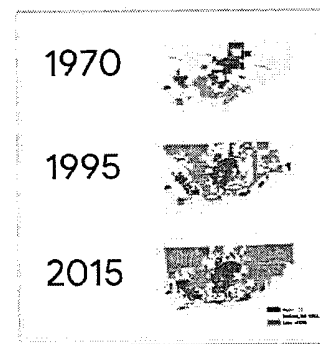
Unaffordable
Housing



Longer
Commutes

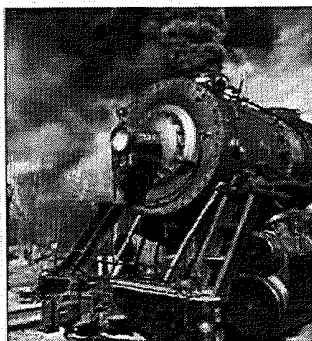


Extreme
Weather



Increased
Inequality

Innovation can have great social benefits or significant drawbacks depending on how thoughtfully it is incorporated into urban life.



Steam Engine



Electric Grid

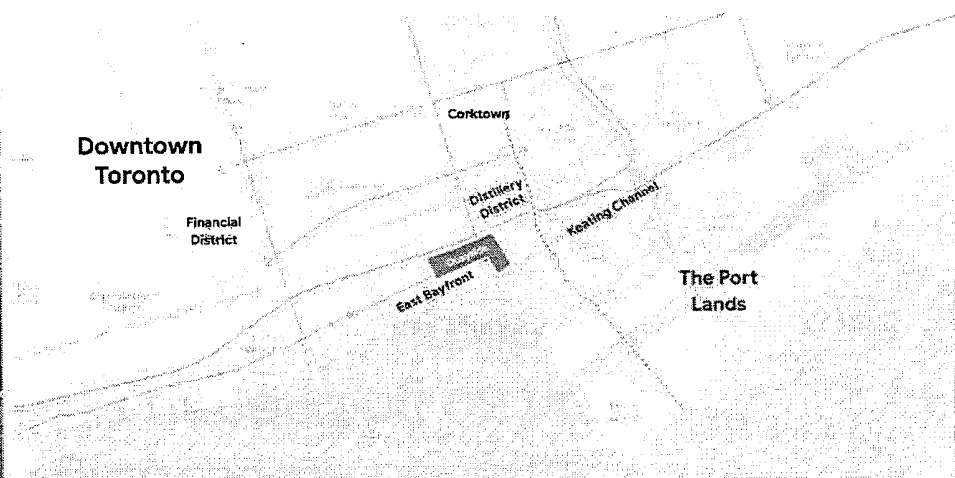
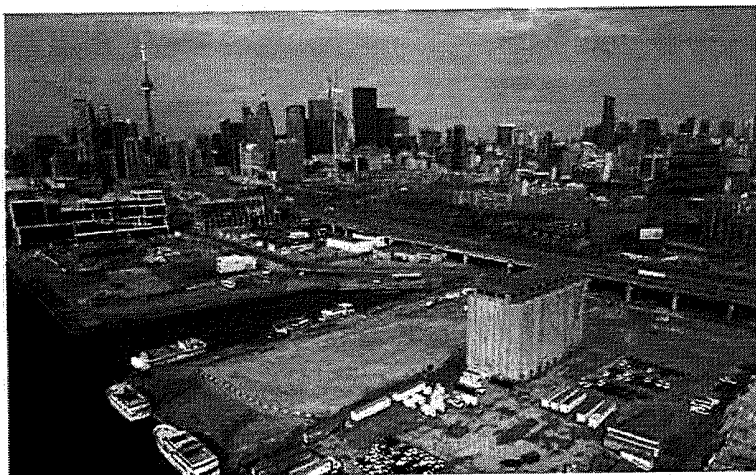


Automobile



Digital

Waterfront Toronto's Quayside RFP (2017)



12 acres owned primarily by Waterfront Toronto and the City in the East Bayfront and Keating Channel Precinct adjacent to the Port Lands.



Waterfront Toronto's Quayside RFP (2017)

Focused on Quayside with a request to explore **district systems at scale within the eastern waterfront.**

Contribute appropriate financial resources and/or solution components to support building and **district-level solutions for the eastern waterfront**

including pilot projects that demonstrate innovative, emerging technologies.

— QUAYSIDE RFP

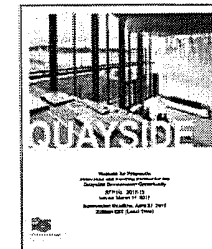
The Partner will... assist in developing a viable and implementable model for sustainable transit along **the eastern waterfront into the Port Lands**

that can be supported by a combination of government and private sector funding."

— QUAYSIDE RFP

The MIDP will include both plans for the **Quayside Parcel and plans at scale,** including for the MIDP Site as required by the business analysis The Parties acknowledge that the plans in the MIDP may explore lands not owned or controlled by the Parties.

— PLAN DEVELOPMENT AGREEMENT
between Waterfront Toronto & Sidewalk Labs



A unique partner

to help set new standards for city building.



Sidewalk Labs has developed a cross-disciplinary team that fundamentally differentiates it from a traditional development partner.

Former public servants

Many with backgrounds in city government — who are sensitive to urban issues and respectful of the public sector.

Urban developers, architects, and planners

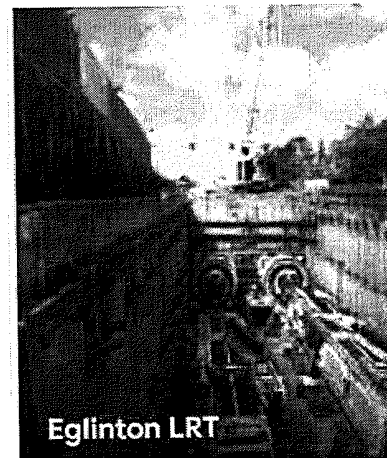
deeply familiar with the practical challenges of creating places that are both appealing and affordable.

Technologists

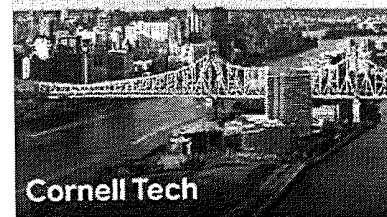
Sensitive to urban issues.



The Bentway



Eglinton LRT



Cornell Tech



The High Line, NYC

Robust public engagement

Over 18 months that has helped shape the plan.

21,000+

of people engaged in-person
during Sidewalk Toronto events

1,720

hours volunteered by resident
reference panel members

271,000+

Online views of livestreamed
events and videos

100+

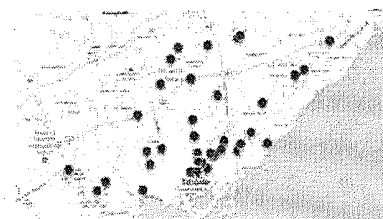
hours spent co-designing
with communities

11,000+

people visited 307 space
at Quayside

2,300

hours committed by
Sidewalk Toronto Fellows



What we heard

Big themes that emerged during public consultation.

Focus on outcomes

No tech for tech's sake

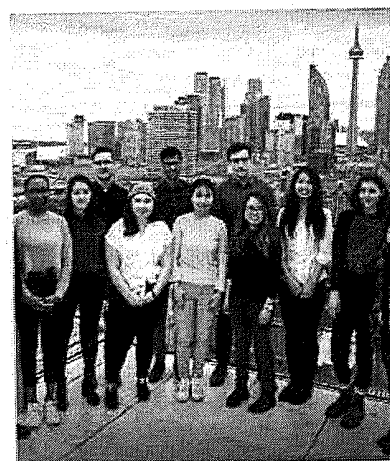
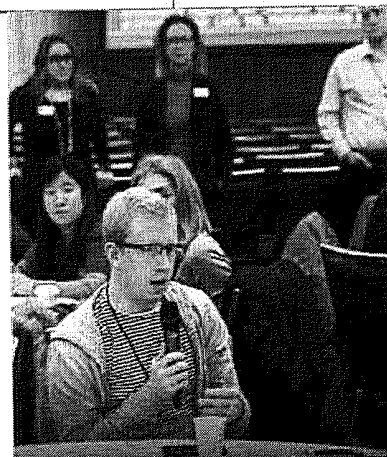
Be inclusive and make room for all

Make sure the public sector has a strong role

Prove yourself — and your concept

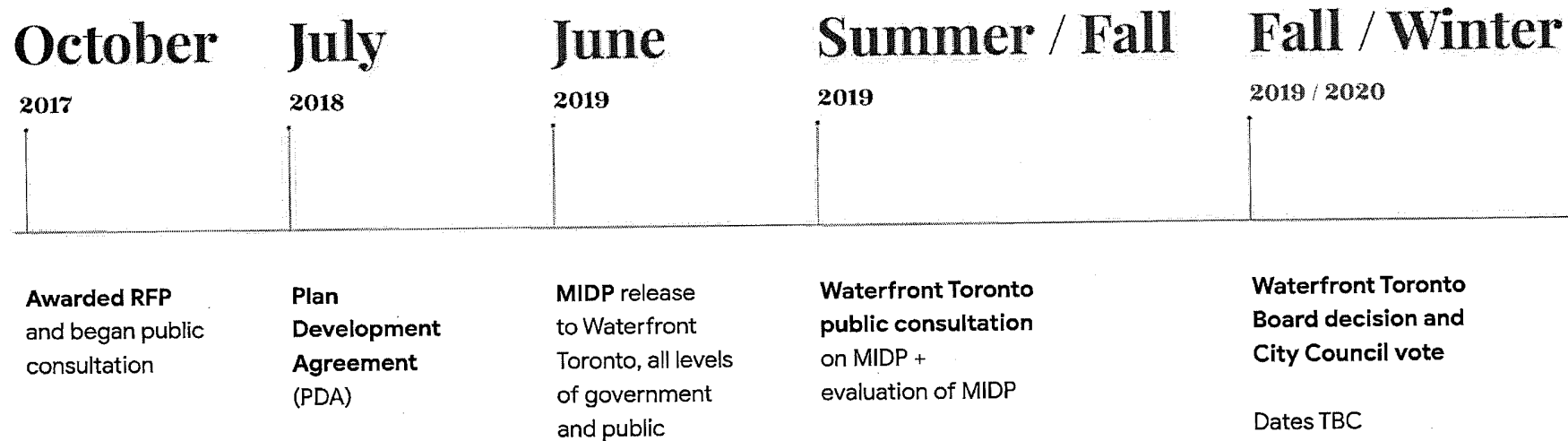
Build on what has been done

Present a transparent business model



Key milestones

Where are we in the process?



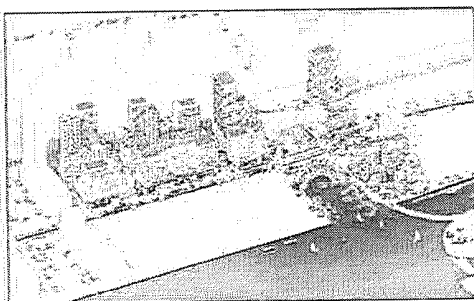
What's included in the MIDP?



The Master Innovation & Development Plan, prepared by Sidewalk Labs

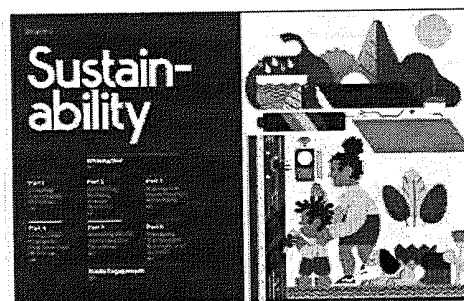
VOLUME 1

The Plans



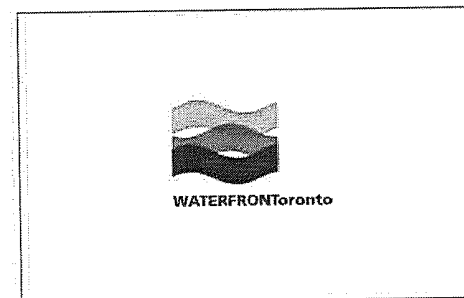
VOLUME 2

Urban Innovations



VOLUME 3

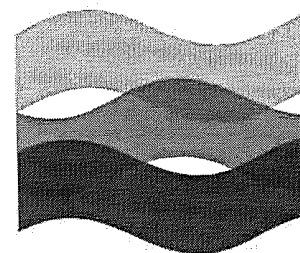
The Partnership



Waterfront Toronto Priority Outcomes

For the MIDP to ensure the Public Interest

- 1 **Job Creation & Economic Development**
- 2 **Housing Affordability**
- 3 **Sustainability & Climate Positive Development**
- 4 **New Mobility**
- 5 **Urban Innovation** (including robust data privacy & digital governance)



WATERFRONTToronto

1

Master Innovation Development Plan (MIDP)

2

Quayside

3

Why is Quayside Important?

4

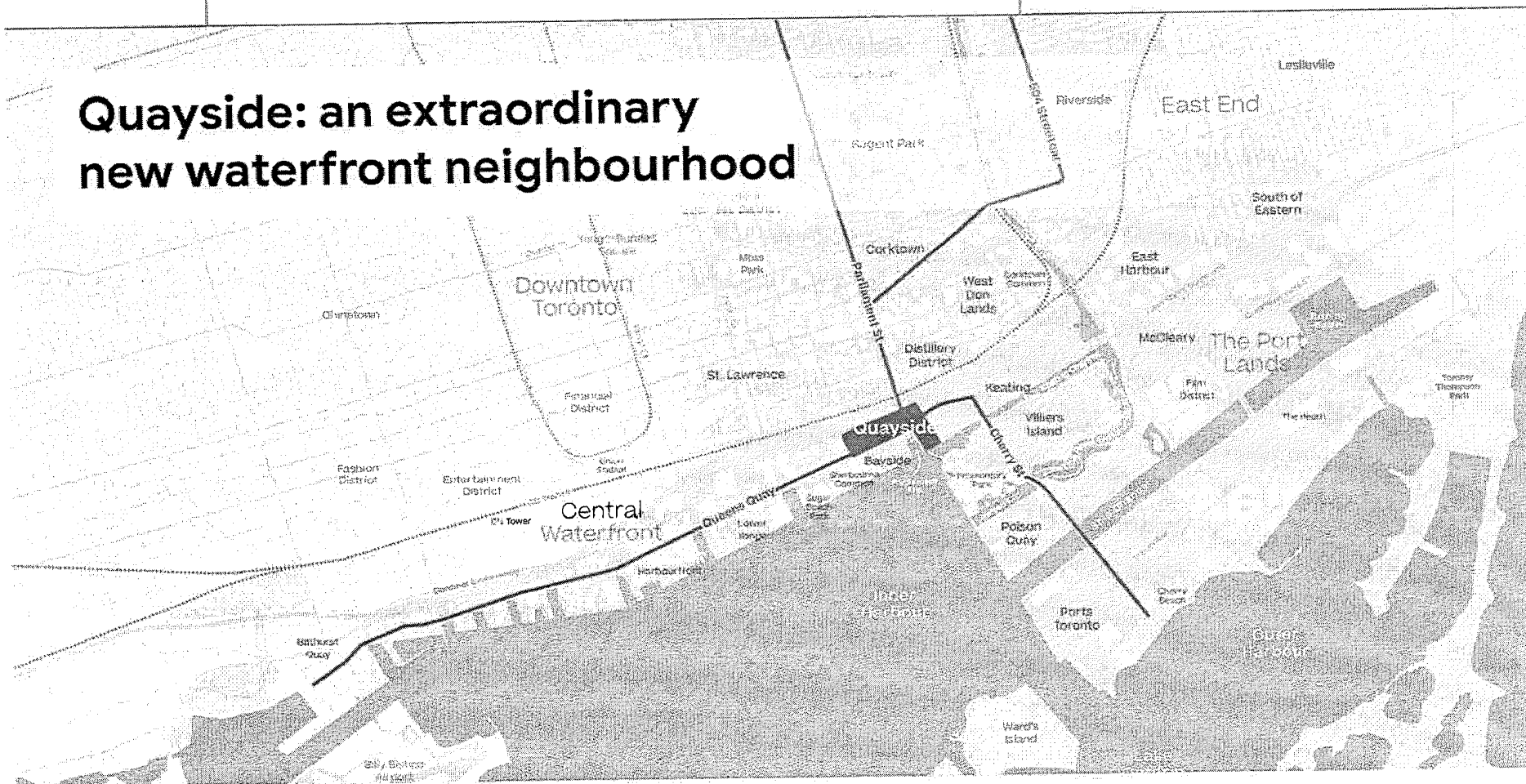
Proposed Quayside Development

5

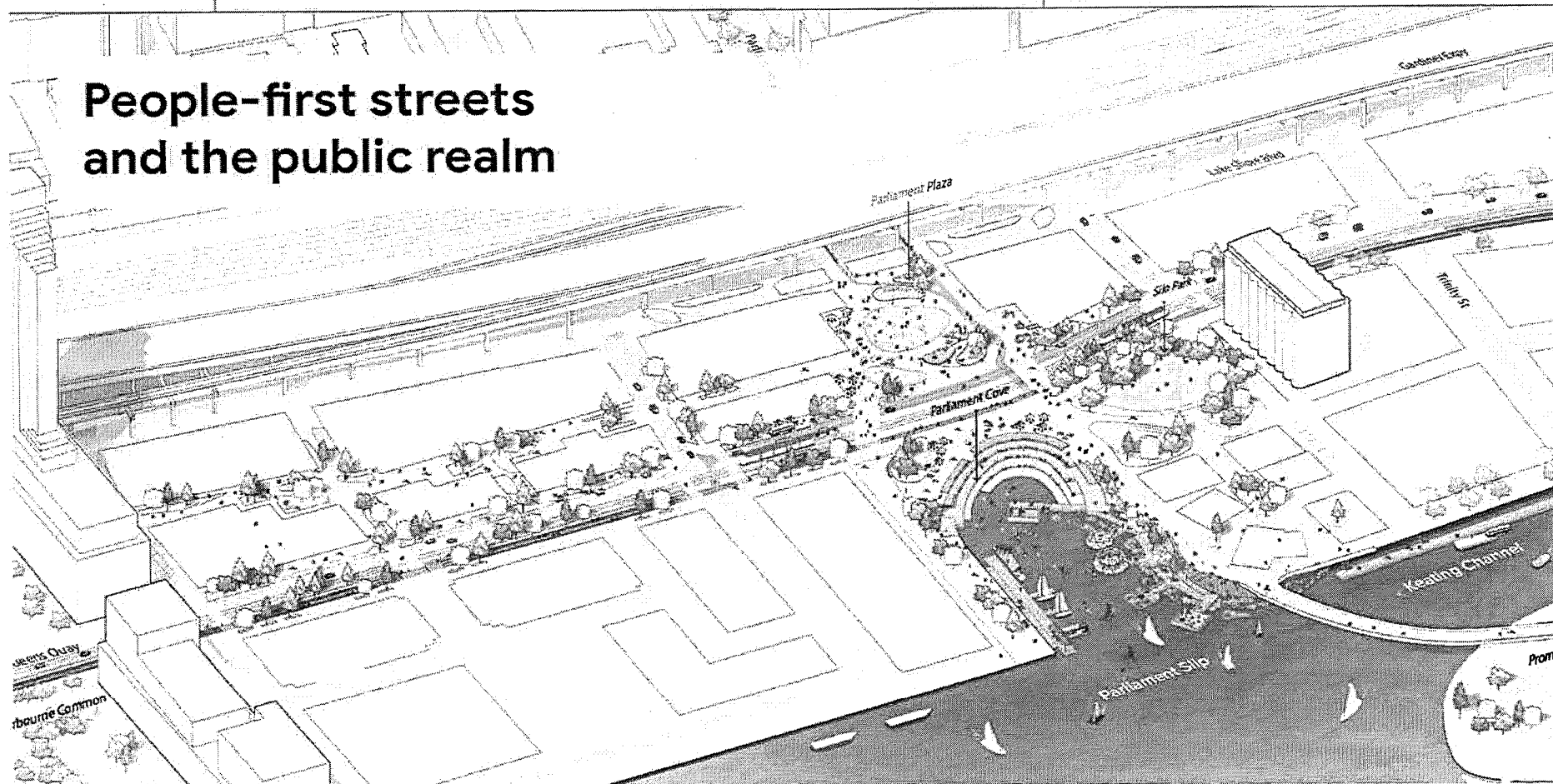
What is the Quayside Area?

**Sidewalk Labs proposes to develop
Quayside as a complete and inclusive
community that supports the
investments Governments have
already made on the waterfront**

Quayside: an extraordinary new waterfront neighbourhood

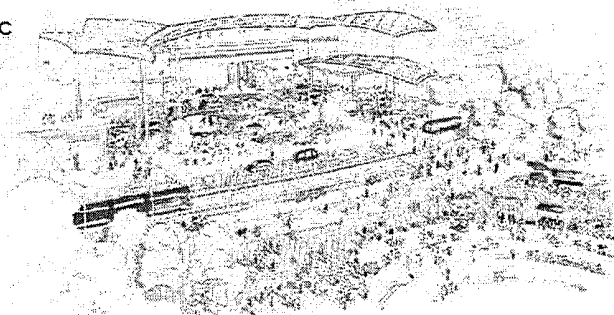


People-first streets and the public realm

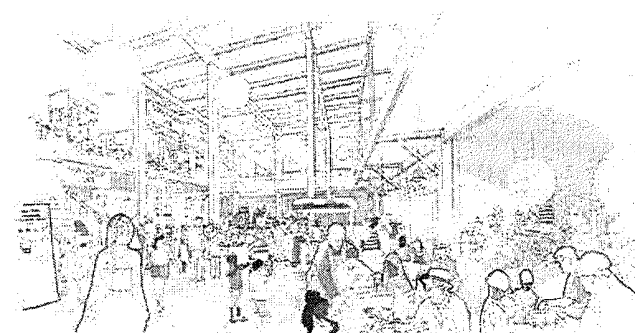


New public spaces

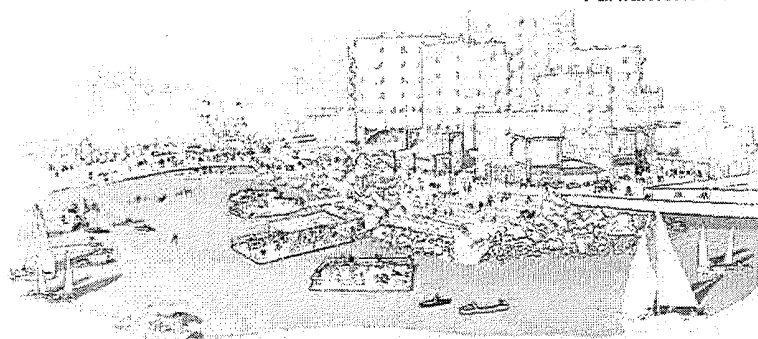
Creating a connected series of new public spaces and animated ground floors that serve residents, workers, visitors and foster local businesses.



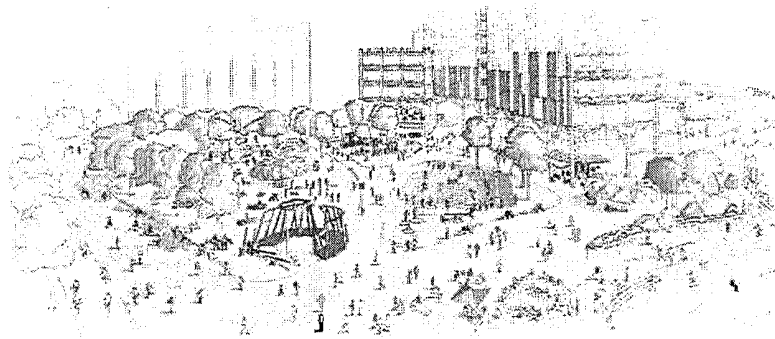
Parliament Plaza



Ground Floors for Community + Small Businesses



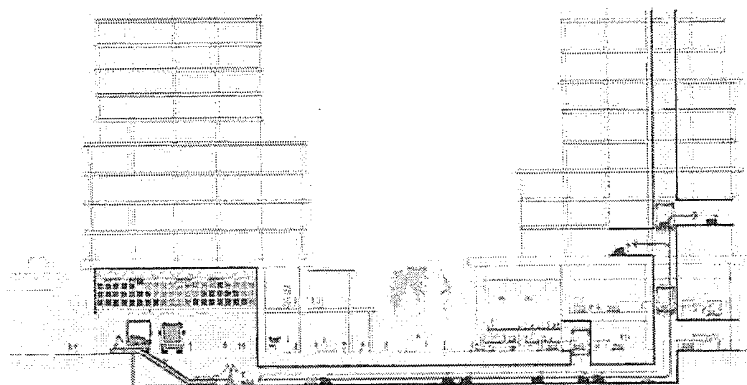
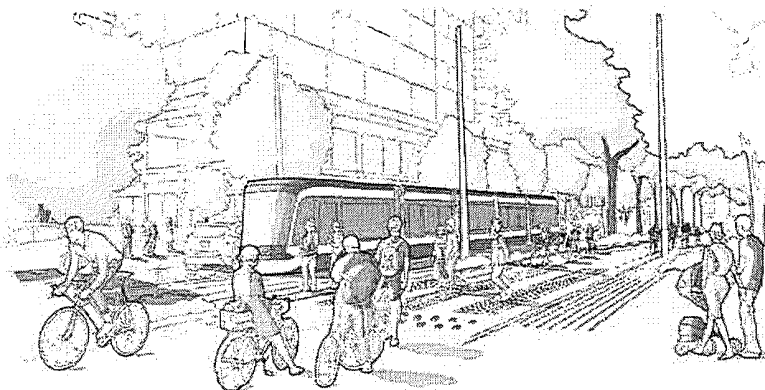
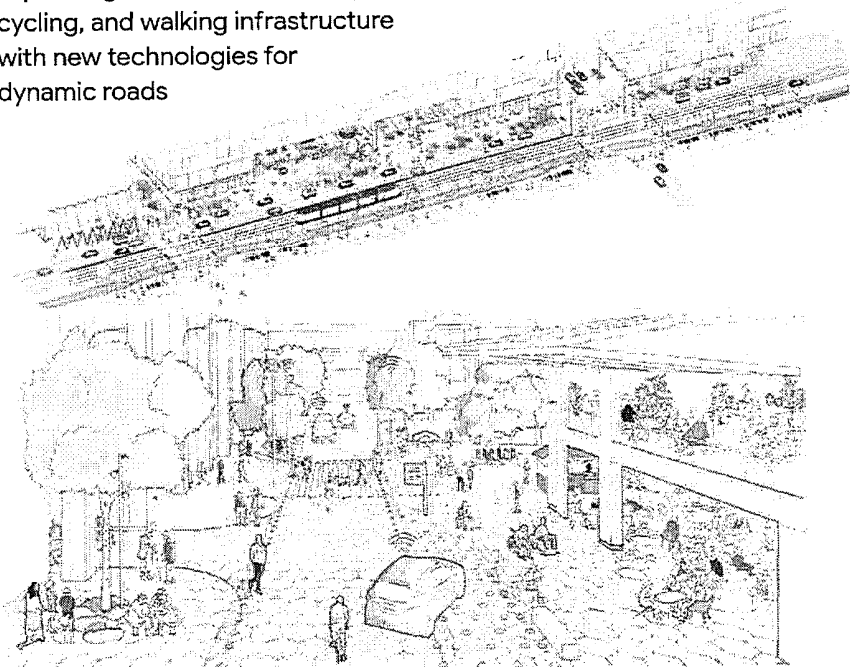
Parliament Slip



Silo Park

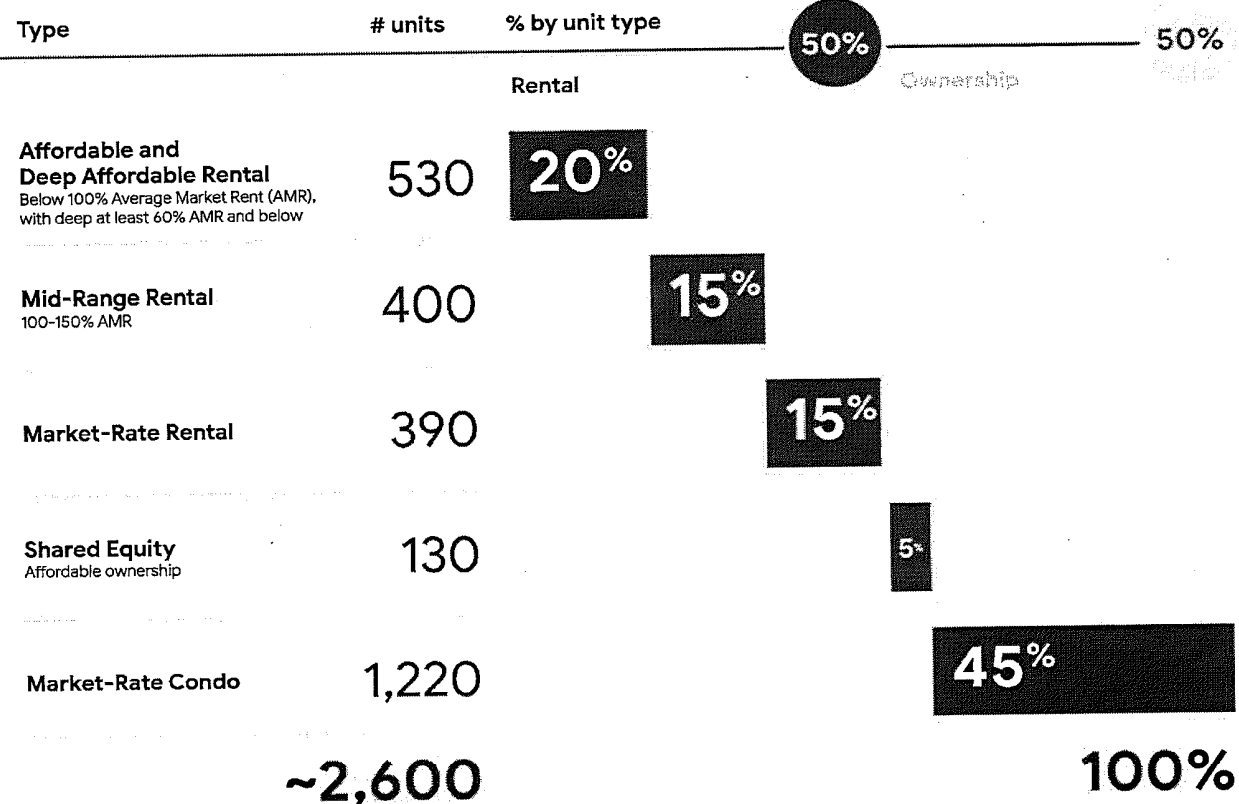
New mobility

Expanding the waterfront LRT, prioritizing transit, cycling, and walking infrastructure with new technologies for dynamic roads



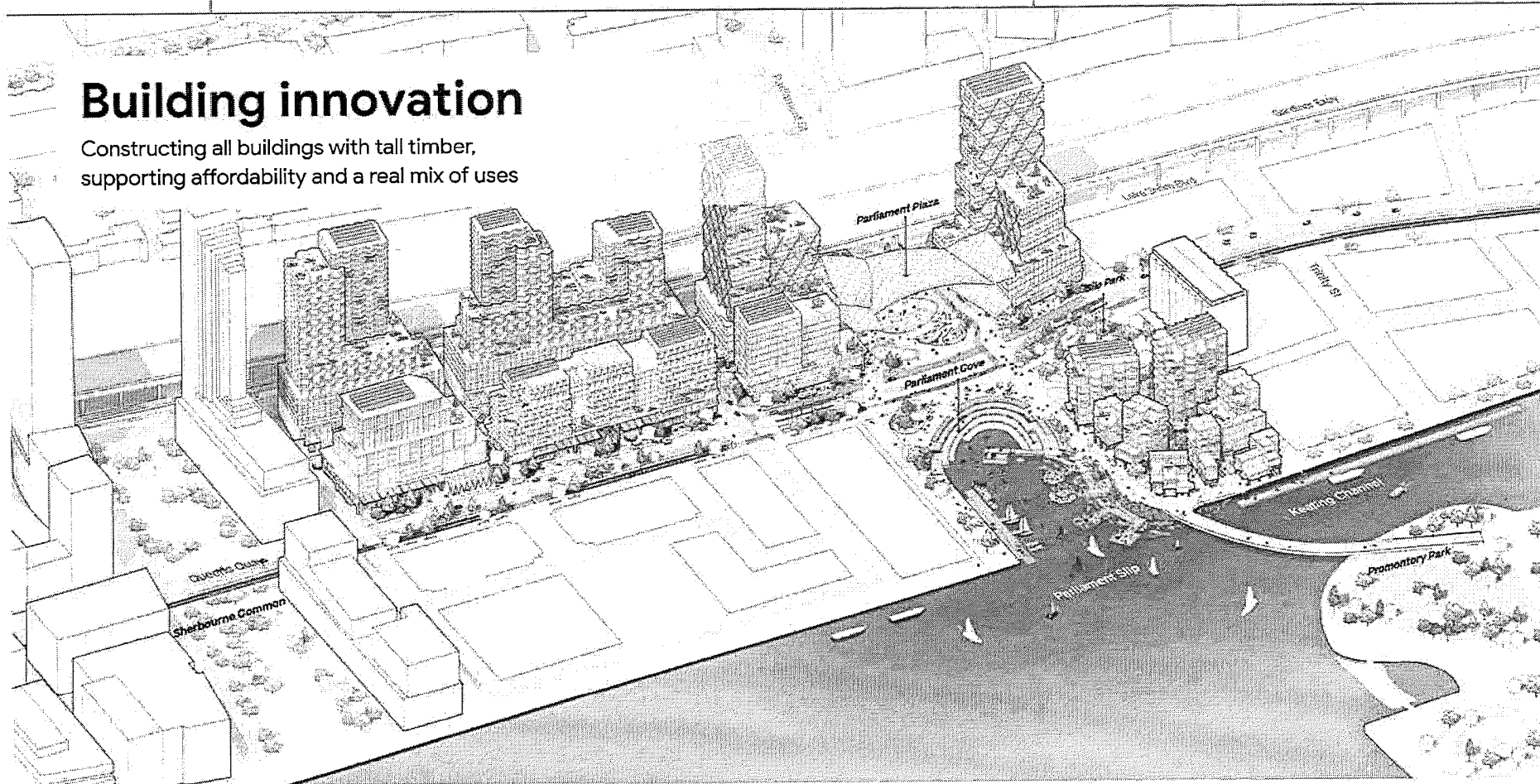
Committing to 40% below- market housing in Quayside

- Deep affordability in partnership with non-profits brought in to participate in design in a collaborative way
- Middle-income and family housing options for households left behind by Toronto market
- An inclusive, complete community where buildings and amenities shared by all residents



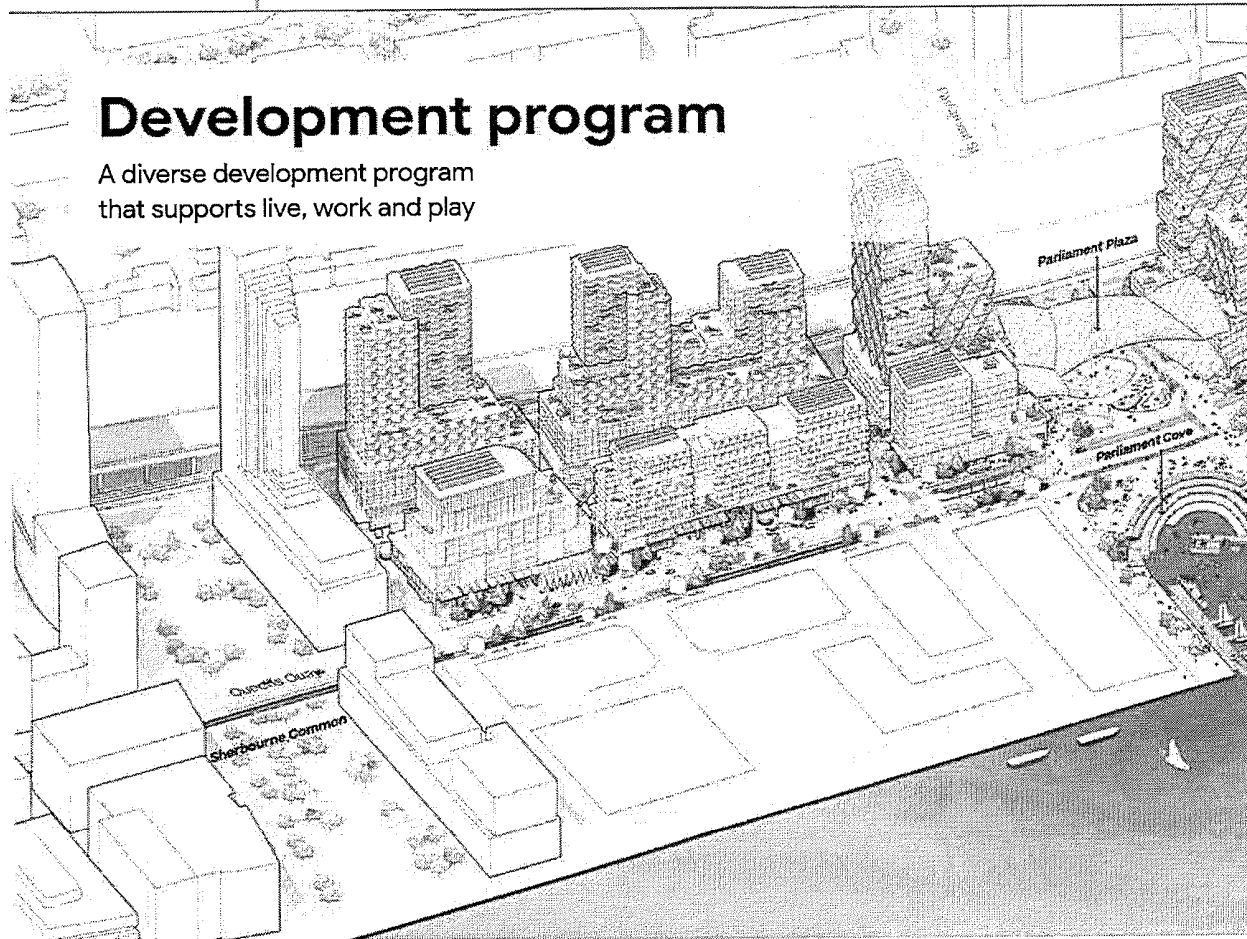
Building innovation

Constructing all buildings with tall timber, supporting affordability and a real mix of uses



Development program

A diverse development program
that supports live, work and play



Draft Quayside Site Plan

68% Residential (11% Flexible Loft Space)

40% Below Market

- 20% Affordable Housing (includes 5% deeply affordable)
- 20% Middle-Income Housing (includes 5% shared equity)

20% Commercial

12% Flexible Ground Floors

(Stoa: Office, Retail, Production, Arts, Community)

~2,600 Residential Units (approx)

5,000 Residents (approx.)

Current Zoning

93% Residential

20% Affordable Housing

7% Commercial / Retail

Economic Development

12,000+ construction jobs created in Canada

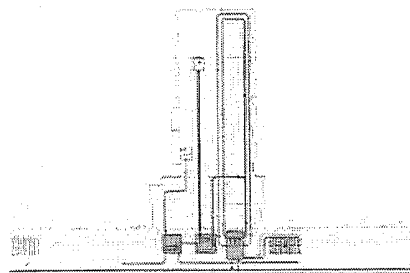
3,900 jobs located at Quayside long-term

Climate innovations



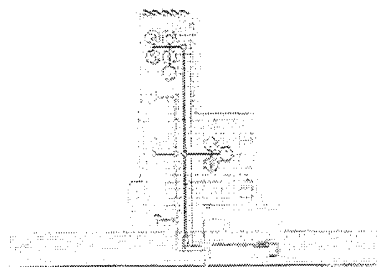
Thermal Grid

For fossil-free
heating and cooling



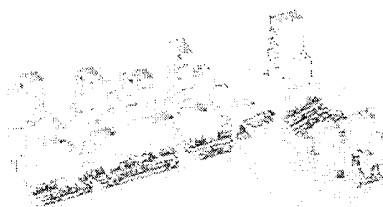
Advanced Power Infrastructure

Manages energy consumption and
draws from clean grid & renewable
sources (solar & batteries)



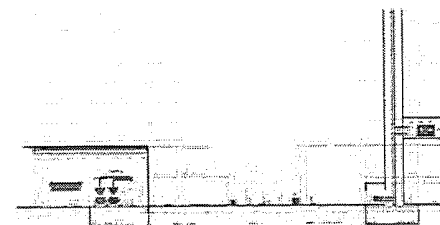
Advanced Stormwater Management

Monitors flows to
improve water quality
and resiliency



Pneumatic Waste Collection

Significantly increases
waste diversion and
facilitate collection



Creating a higher data & privacy standard

Sidewalk Labs will receive no special treatment and will not sell personal information or use it for advertising purposes



Urban Data Trust

An independent entity to control, manage, and make publicly accessible all data that could reasonably be considered a public asset, and a set of rules that would apply to all entities operating in Quayside, including Sidewalk Labs.



Open Standards

Sidewalk will base its technology on open standards, making it easy for others to build and connect new services, offer competitive alternatives, and drive innovation.



Responsible Data Use Assessment

Publicly auditable assessment for all public and private digital services required before data is collected and used.



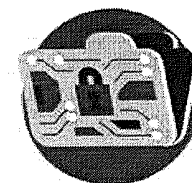
Responsible Data Use Guidelines

Application of the guidelines to all parties in Quayside, not just Sidewalk Labs, to put personal privacy and the public good first, while fostering innovation.

An Enhanced Global Standard for Use of Urban Data

Data can play a role in improving the day-to-day operation of the neighbourhood, leading to a more sustainable, accessible and responsible place to live. Sidewalk Labs will receive no special treatment and will not sell personal information or use it for advertising purposes

Sidewalk's proposed approach to digital governance in Quayside will demonstrate to Toronto, Canada, and the rest of the world that cities do not need to sacrifice their values of inclusion and privacy for opportunity in the digital age.



Quayside: a complete and inclusive community



Quayside: a complete and inclusive community



Quayside: a complete and inclusive community



1 Introduction to the MIDP (Master/Operational Development Plan)

2 Quayside

3 Why Is Scale Important?

4 Proposed Roles & Responsibilities

5 What's Coming Next & Feedback?

Truly achieving public policy objectives and implementing innovations only possible at a scale larger than Quayside

01

Viability of Innovations

Mobility systems like transit can't be done in isolation, and urban systems need a larger geography to properly recoup costs, encourage others to participate, and optimize outcomes.

02

Economic Opportunity

Significant economic development requires a major catalyst and if done well could spur a new urban innovation cluster.

03

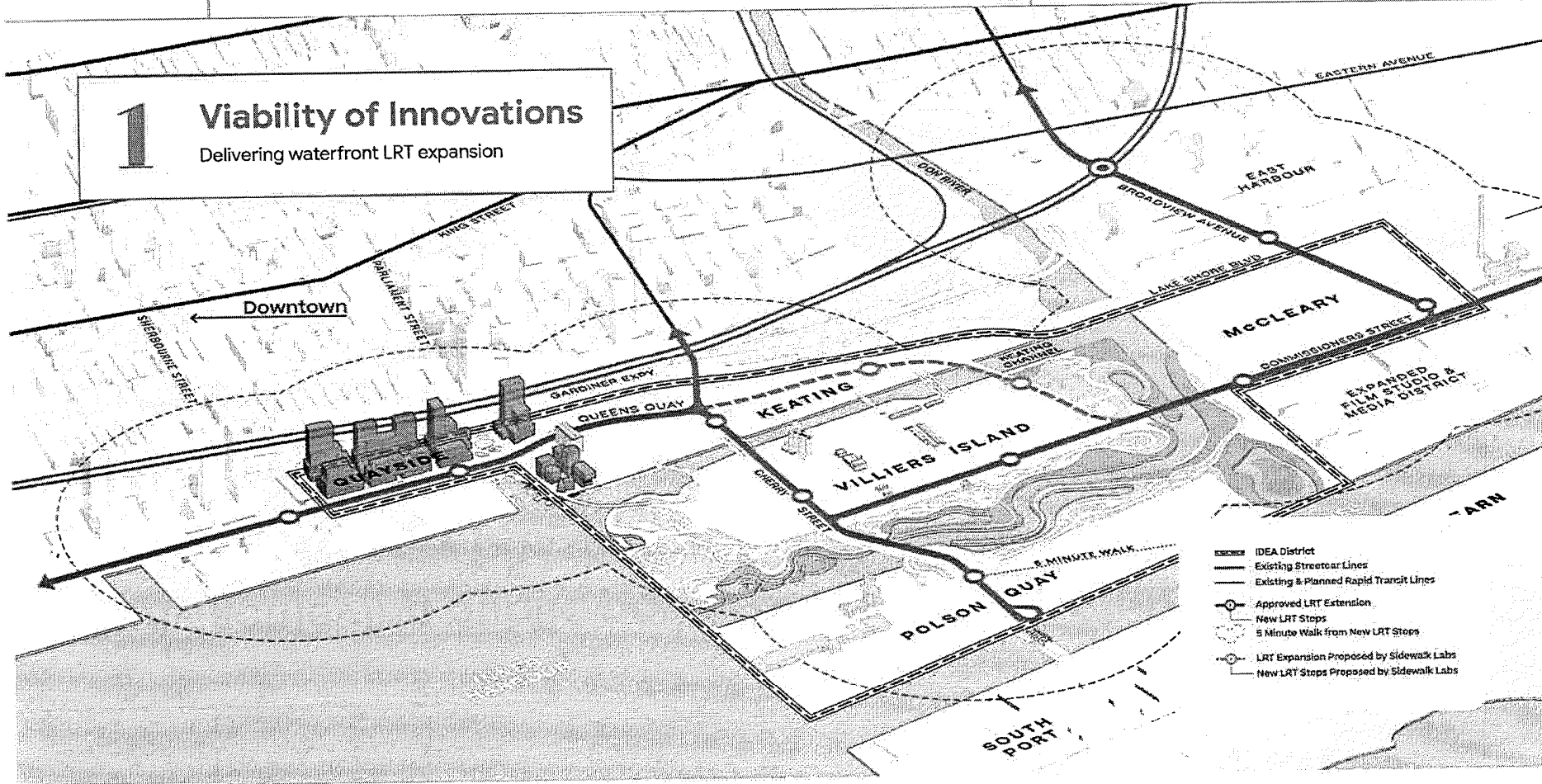
Platform for Others to Participate

A program for extending the identified innovations beyond Quayside is needed to truly create the conditions for supporting innovation by local companies.

1

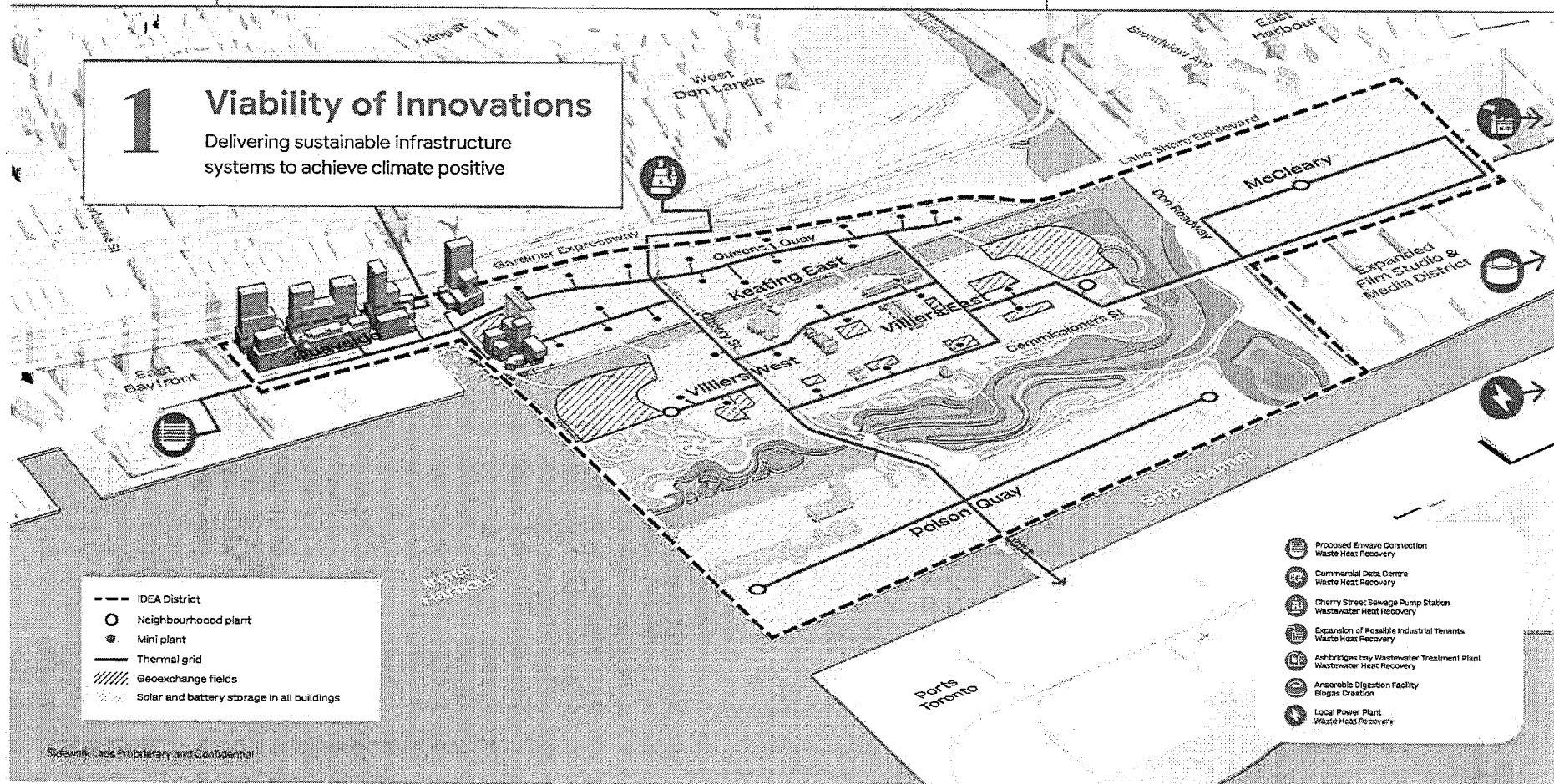
Viability of Innovations

Delivering waterfront LRT expansion



1 Viability of Innovations

Delivering sustainable infrastructure systems to achieve climate positive

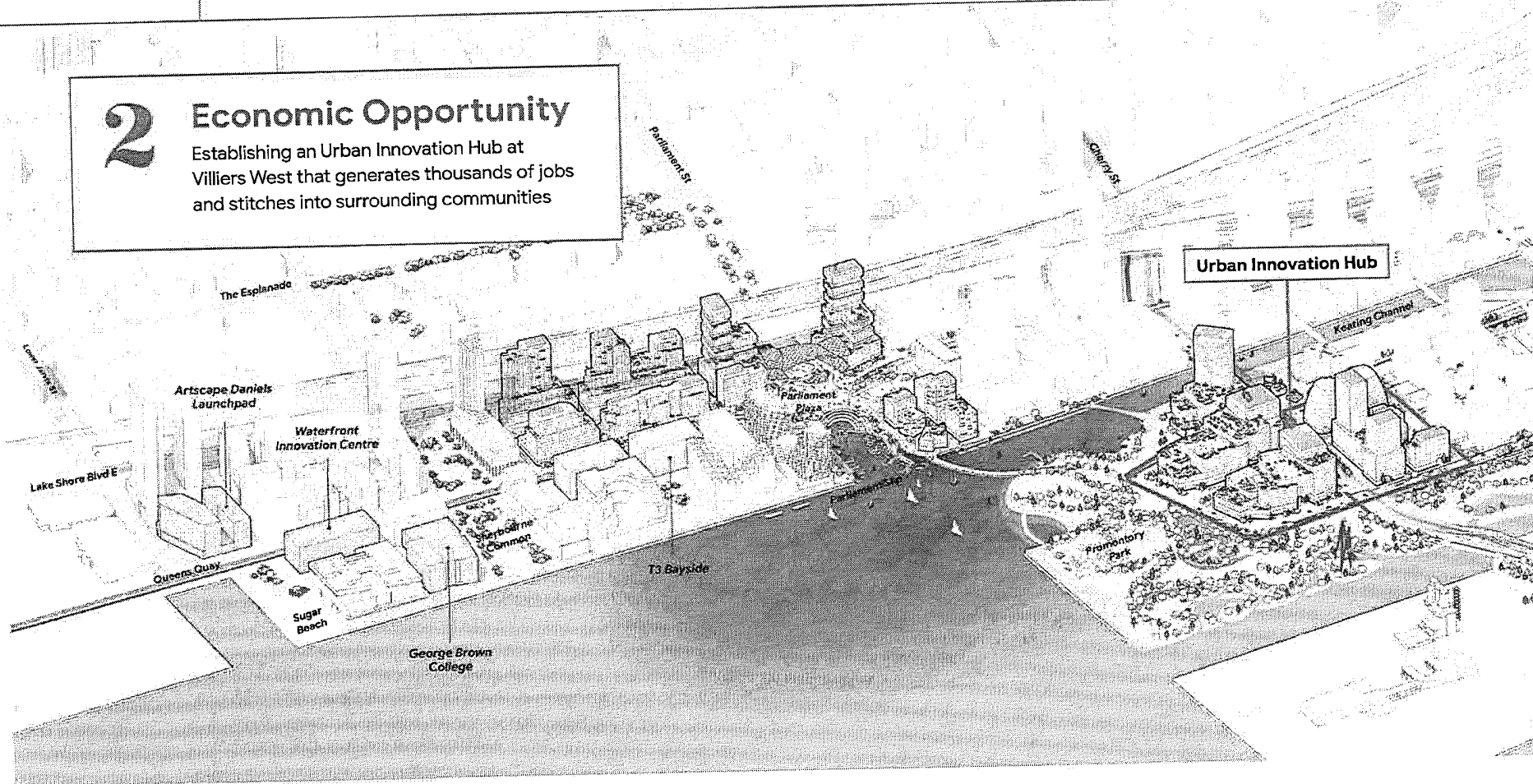


Sidewalk Labs Proprietary and Confidential

2

Economic Opportunity

Establishing an Urban Innovation Hub at Villiers West that generates thousands of jobs and stitches into surrounding communities



2

Economic Opportunity

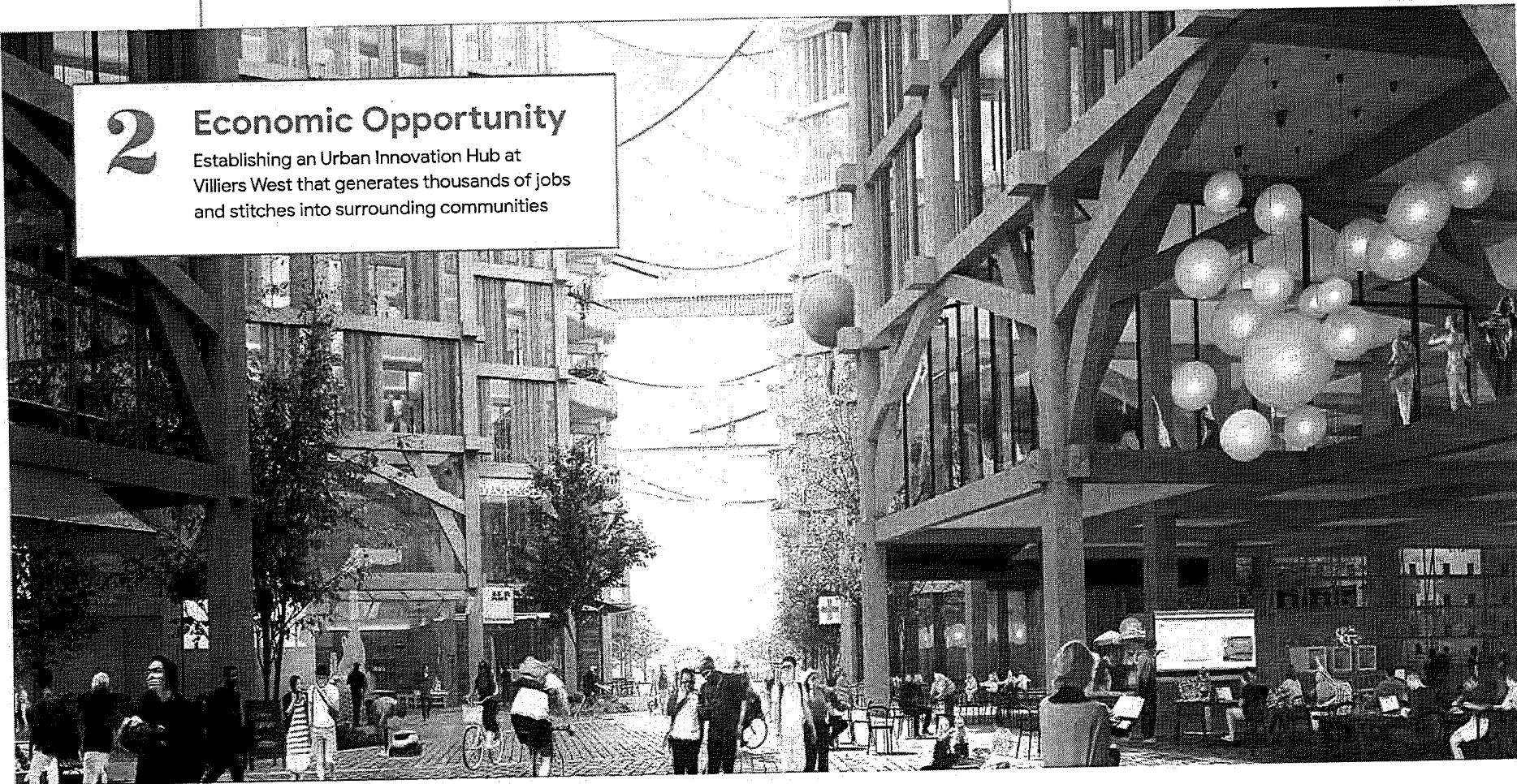
Establishing an Urban Innovation Hub at Villiers West that generates thousands of jobs and stitches into surrounding communities



2

Economic Opportunity

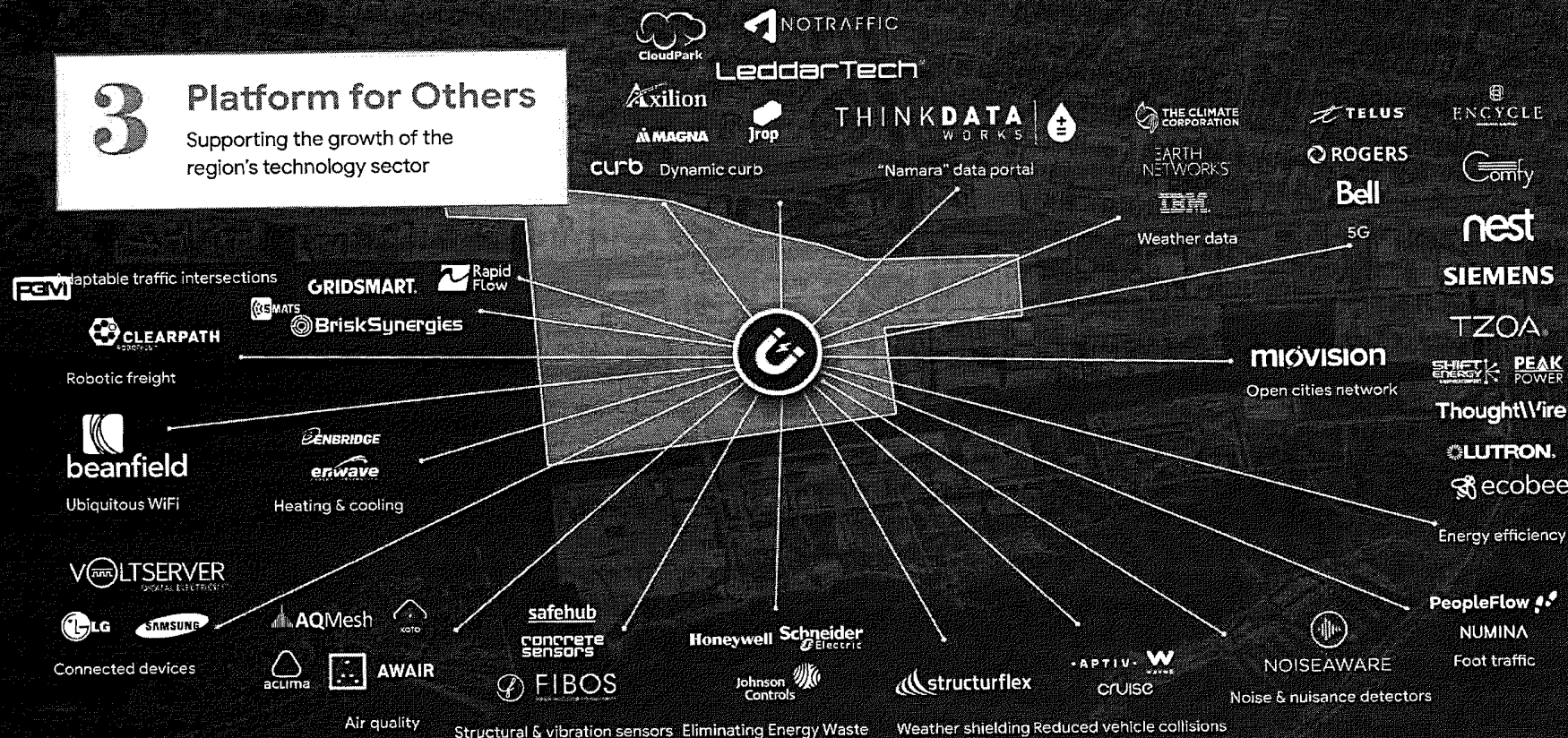
Establishing an Urban Innovation Hub at Villiers West that generates thousands of jobs and stitches into surrounding communities



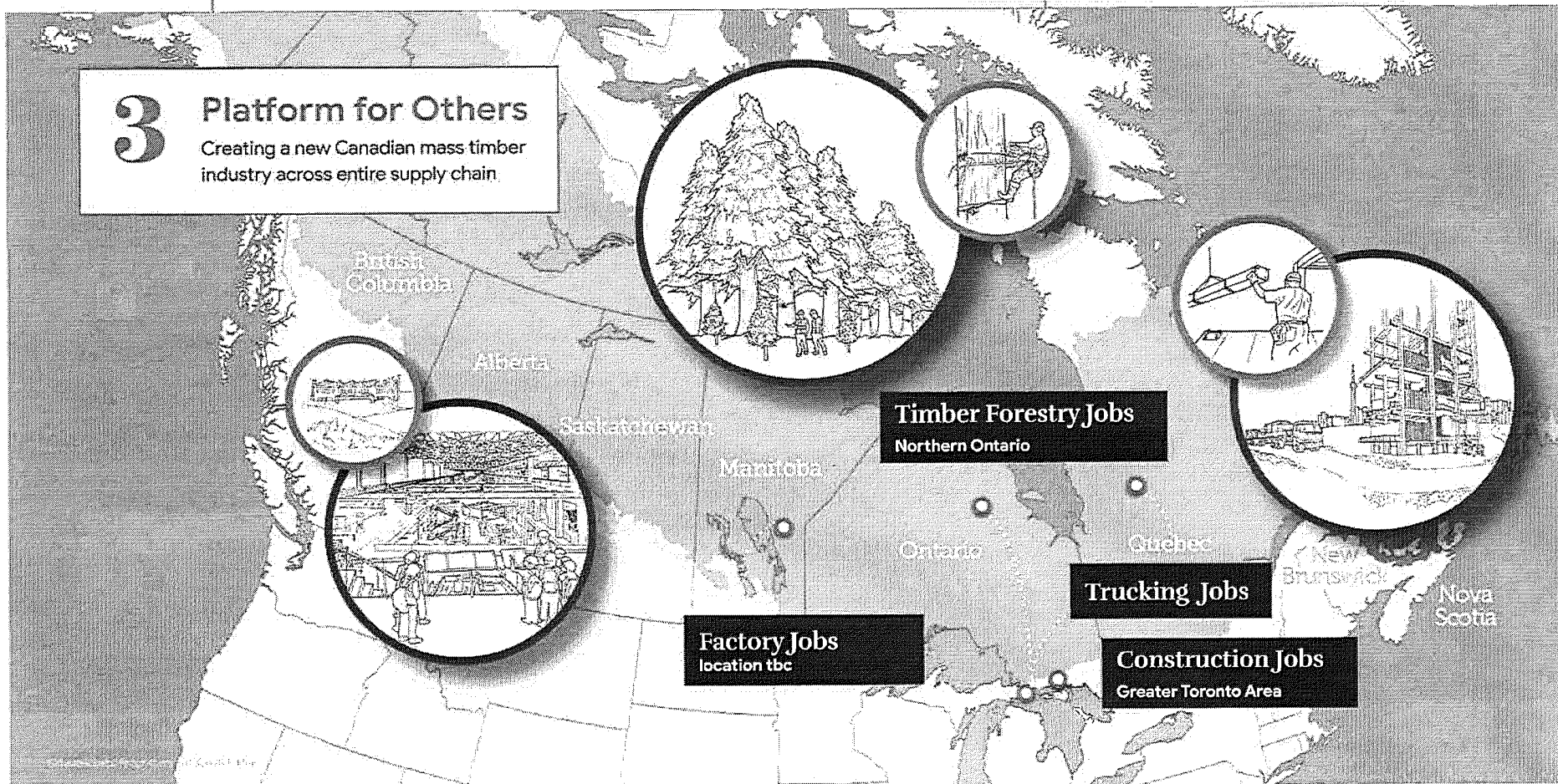
3

Platform for Others

Supporting the growth of the
region's technology sector



Companies shown are just examples and their inclusion here does not represent any agreement or future plans



1 Introduction to the MIDP Master Integrated Development Plan

2 Overview

3 Why is Scale Important?

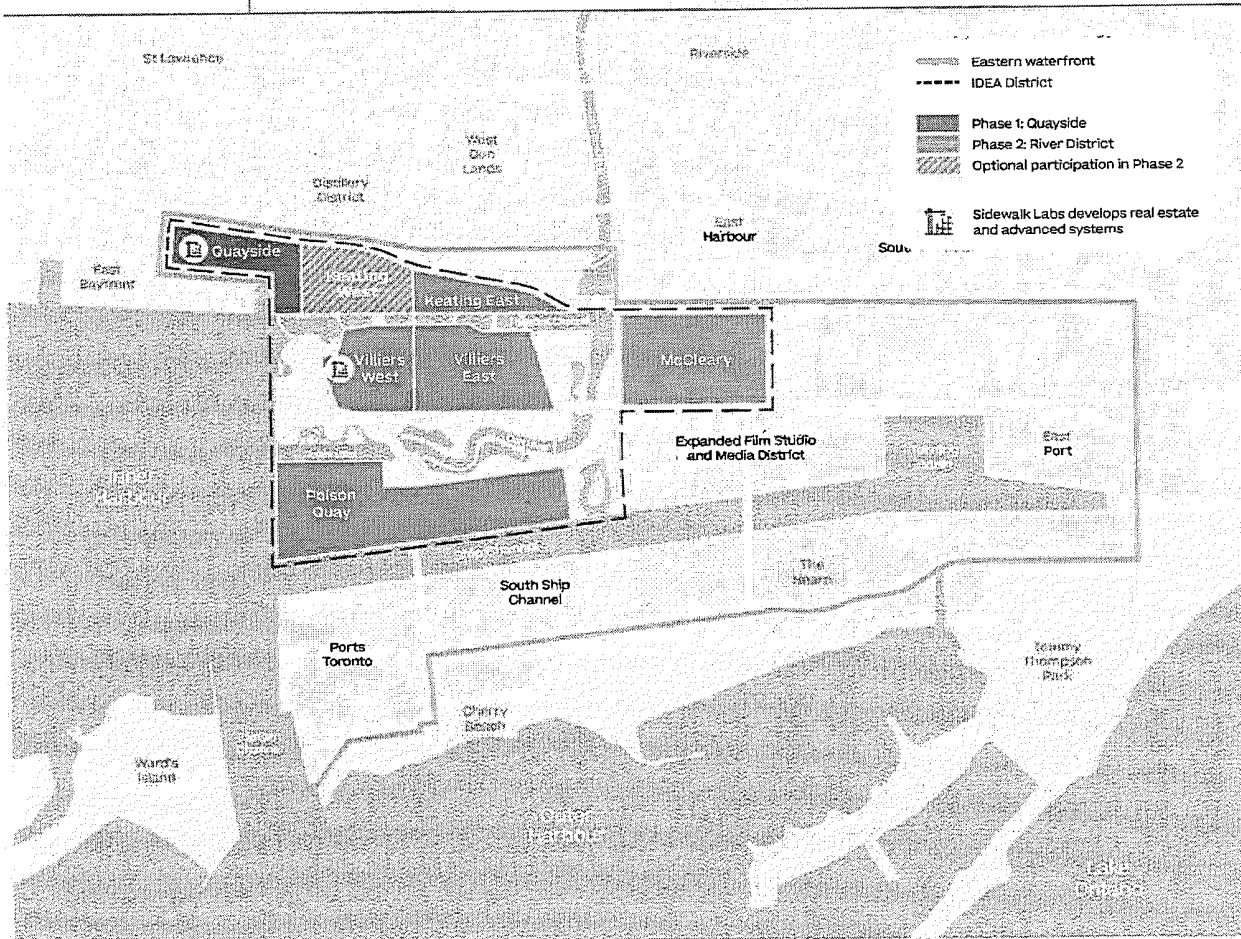
4 Proposed Roles & Responsibilities

5 What Outcomes Are Possible?

	The IDEA District would leverage the combination of three elements to deliver on the project's objectives.
1	A strong public administrator in an oversight role
2	A regulatory framework that would foster the necessary conditions for delivering on the promise of the MIDP
3	A set of financing tools that would enable the project to leverage its own value for implementation

IDEA District

The MIDP will include a proposal to create an **Innovative Design and Economic Acceleration (IDEA) District** to promote innovation and accelerate inclusive growth.



IDEA District

Sidewalk Labs would propose to partner with Waterfront Toronto to support the innovation strategy for the IDEA District

- The proposed geography of the IDEA District includes neighbourhoods already planned as mixed-use developments, and is a scale at which the outcomes proposed by Waterfront Toronto can be achieved
- As vertical developer for Quayside and Villiers West, Sidewalk Labs could create a model for innovative development and prove market viability for ideas that others can scale

4 proposed roles for Sidewalk Labs

Each of the roles contemplated as part of the Innovation and Funding Partnership is designed to leverage Sidewalk Labs' capabilities and expertise to support the District Administrator and enable the project to achieve the shared objectives of Sidewalk Labs and Waterfront Toronto.

Development of Real Estate & Advanced Systems

In partnership with local development entities, prove out the viability of the innovation agenda at Quayside, and enable the development of a new hub for economic growth on an accelerated timeline at Villiers West

Innovation Planning, Design, & Implementation

Provide advisory, technical, and management services to the District Administrator to implement the MIDP's innovation strategy

Technology Deployment

Serve as technical advisor in sourcing the majority of technologies from existing vendors. For a select few where the solution doesn't exist in the market, Sidewalk Labs would develop the product.

Enabling Infrastructure Financing (Optional)

Provide optional financing to accelerate delivery of the LRT system, and advance development of municipal and advanced infrastructure systems

3 core areas of business

Since Sidewalk Labs launched in 2015, three core areas of business have come into focus during public consultation.

Real Estate

Utilization of the knowledge gained, and ideas validated in our explorations, to enable currently counter market programmatic decisions and add value to real estate projects.

IF SUCCESSFUL...

Sidewalk Labs would consider both investing in projects and partnering with others to develop projects around the world.

Infrastructure

Creation of a company, funded by both ABC and other investors, to fill a gap in the infrastructure capital markets and develop innovative systems on the cutting-edge of the battle to combat climate change.

IF SUCCESSFUL...

This Sidewalk Labs company would invest in and help build the next- generation of infrastructure systems around the world.

Technology

Investment in a limited number of products core to the delivery of our objectives and for which we are particularly well-suited to develop.

IF SUCCESSFUL...

Sidewalk Labs would plan to sell these products to cities, municipalities, and developments around the world.

1 Introduction to the Sidewalk Toronto Development Plan

2 Overview

3 Why Is This Important?

4 Proposed Rules & Responsibilities

5 What Outcomes Are Possible?

Achieving shared outcomes

The MIDP outlines a new development approach that not only meets Waterfront Toronto's priority outcomes — **but exceeds them.**

Job Creation & Economic Development

Tens of thousands of jobs across sectors

An inclusive economic engine that creates tens of thousands of jobs and focuses on addressing big urban challenges

Housing Affordability

40% Below-market housing vision

A commitment to generating thousands of below-market units

Sustainability & Climate Positive Development

89% Greenhouse gas reduction

An 89% reduction of greenhouse gas at Quayside with greater than 100% reduction at scale due to exports of renewable energy.

New Mobility

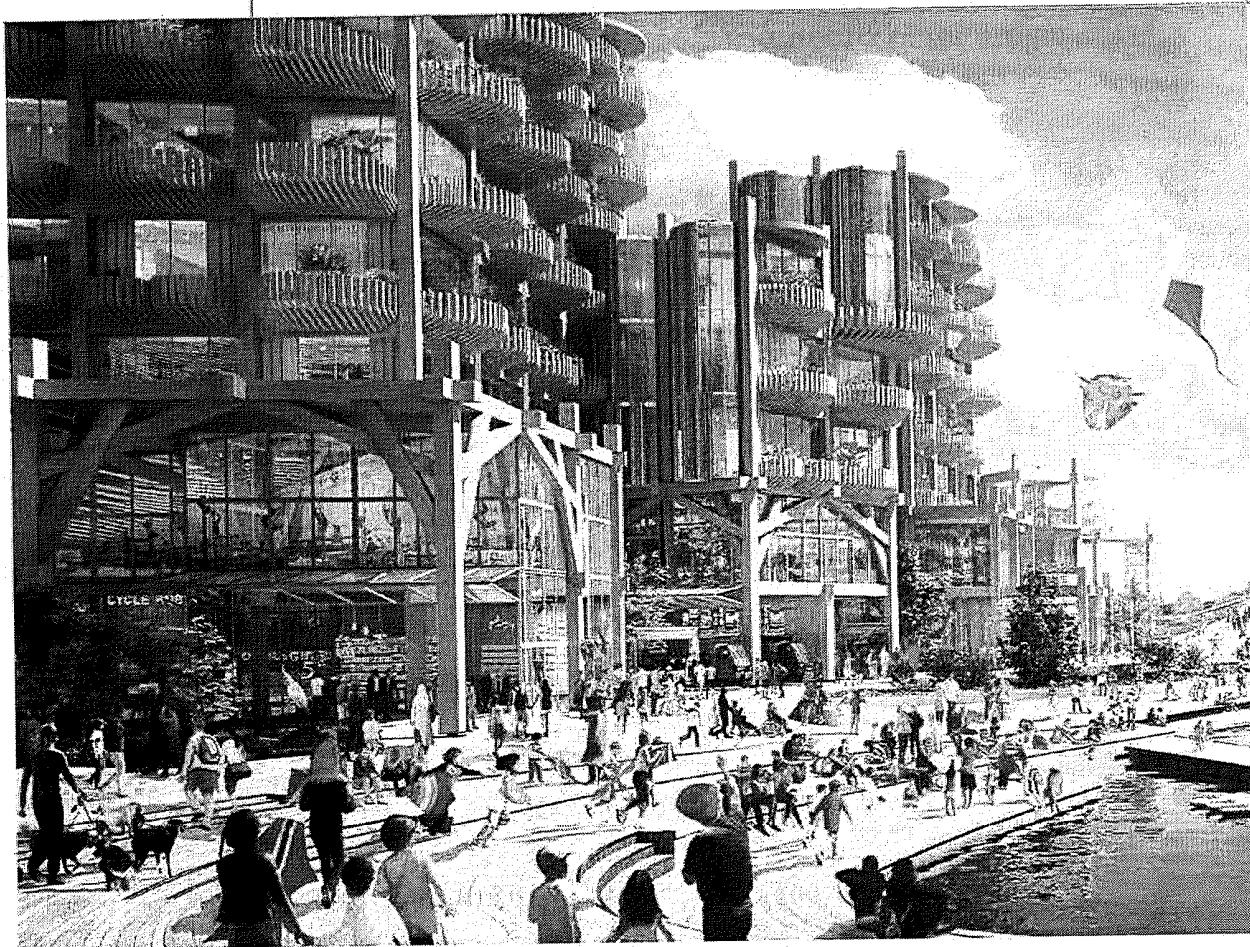
60% Reduction in car trips

New transit extensions delivered, along with enhanced cycling and pedestrian infrastructure. 91% more space on streets opened to pedestrians.

Urban Innovation (including robust data privacy & digital governance)

Framework for ethical governance of urban data

For privacy protection and innovation



Together

We have a chance to create a new model for inclusive, sustainable economic growth in Canada

- **Accelerate** development by decades
- **Stimulate** new industries and create tens of thousands of jobs
- **Create** a new global hub for urban innovation in Canada
- **Establish** a new climate positive district
- **With partners, build** thousands of new units of housing, pioneering new approaches to affordability

MIDP BRIEFING

THANK YOU

SIDEWALK
TORONTO

A SIDEWALK LABS PROJECT

SIDEWALK TORONTO

A SIDEWALK LABS PROJECT

Partnership Proposal

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING
ASSISTANT DEPUTY MINISTERS

JOSH SIREFMAN | STEVENTURELL | SIMON BRANDLER
MICAH LASHER | PINO DIMASCIO

APRIL 16, 2019

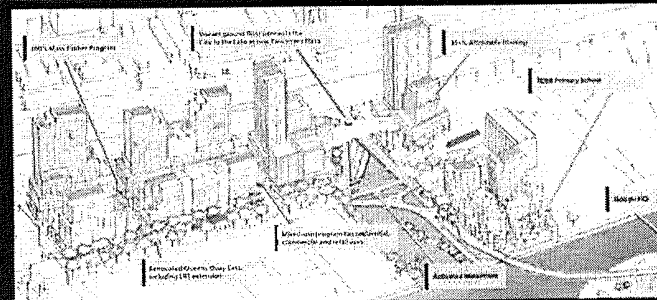
The Master Innovation and Development Plan

Over the course of the year, the Sidewalk Labs team has shared components of the proposals that comprise the MIDP, including proposed plans and "Pillar" innovation strategies. Today's discussion will focus on "Volume 3", the proposed partnership structure designed to support implementation of the MIDP.

VOLUME 1

The Plan

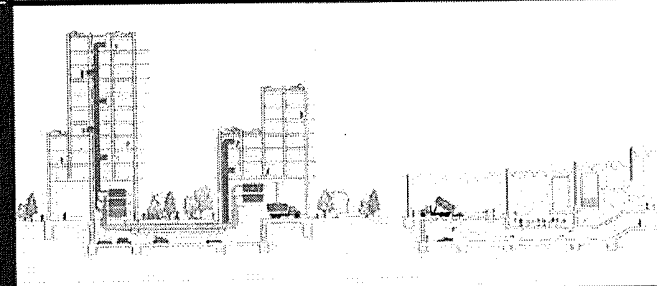
Comprehensive Development Plan Proposal for Quayside and the River District, and associated economic impacts



VOLUME 2

The Pillars

Innovation Agendas in mobility, sustainability, buildings & housing, social infrastructure, and the public realm



VOLUME 3

The Partnership

Business Plan and Governance Structure designed to support implementation of MIDP proposals



Federal

Provincial

Municipal



Harmonizing Priorities in Shared Transaction Objectives

Over the course of an 18-month engagement process, Sidewalk Labs considered its own objectives and capabilities, those of Waterfront Toronto, and feedback received from the public, all of which informed a series of objectives that underpin the proposed transaction structure.

DEVISE a transaction to achieve Waterfront Toronto's public objectives

STRUCTURE the role of Sidewalk Labs to leverages its strengths

SCALE the project to achieve the desired outcomes

ESTABLISH strong public sector oversight

USE proven approaches where possible

PHASE development to manage risk

ALIGN financial interests

A New Partnership Model Designed to Drive Inclusive Growth

This volume of the MIDP will present a comprehensive practical and financial proposal for a new kind of public-private partnership—one designed to dramatically improve urban life in the 21st century.

Sidewalk Labs has developed a proposal for a public-private partnership model that is rooted in precedents demonstrated in Toronto and Canada, and is designed to achieve the ambitious outcomes originally introduced in Waterfront Toronto's Request for Proposals.

Key Concepts of the Proposal

- **IDEA District.** At the core of the strategy is the creation of an Innovative Design and Economic Acceleration (IDEA) District, a designated geography which would be subject to a set of policy tools designed to promote innovation.
- **District Administrator.** Critically, the IDEA District would not be managed by Sidewalk Labs but instead would be overseen by a District Administrator (proposed to be Waterfront Toronto).
- **Mandate of the Administrator.** The District Administrator would set the innovation and development priorities for the district, alongside the three levels of government, and would be empowered with a set of tools to ensure that those priorities are achieved.
- **Innovation and Funding Partner.** The District Administrator would engage Sidewalk Labs for the delivery of a series of discrete capabilities that enable progress towards shared objectives.
- **Financial Proposal.** The partnership structure is supported by a comprehensive financial relationship designed such that incentives are aligned, risks are managed, and that Torontonians receive the benefit generated through the project.

The Partnership Model Included in the MIDP is a Proposal

Like the MIDP in its entirety, the partnership model described in Volume 3 is a proposal, which is crafted as a starting point for discussion with Waterfront Toronto, government partners, and the public throughout the MIDP evaluation process.

In order to create and present a holistic business case and governance structure, Sidewalk Labs has taken a definitive stance on a number of deal terms and roles to which it remains open to future evolution and adjustment, pending ongoing conversations with Waterfront Toronto and government partners.

- The proposal should not be viewed as the only potential path that would enable the project to move forward.
- However, the proposed construct includes a series of components, all of which are interconnected to a certain degree. Each single component can evolve and be adjusted, but none without a resulting impact on the larger framework.
- In that regard, Sidewalk Labs does not view the proposal as an “a la carte menu” of items from which certain things can be picked and chosen, but rather a complete offer, inextricably intertwined, but malleable in its entirety.
- Just as the deal terms are intended as a starting point for conversation, the proposed governance structures and specific roles and responsibilities of Sidewalk Labs, Waterfront Toronto, governments, and third parties are designed to leverage the capabilities of each party but are intended for ongoing discussion and consideration.

Today's Discussion

Over the next few weeks, Sidewalk Labs will share, at a high level, all of the deal concepts contemplated in the MIDP as a starting point for more detailed conversation on each throughout the MIDP evaluation and approval process.

Today's conversation will focus on the concept of the IDEA District and the roles and responsibilities of Sidewalk Labs, Waterfront Toronto, Governments, and third party partners as proposed in the MIDP.

In the coming weeks, Sidewalk Labs will also present the proposed financial structure designed to support the partnership structure, including associated assumptions around implementation and risk mitigation.

- **IDEA District.** At the core of the strategy is the creation of an Innovative Design and Economic Acceleration (IDEA) District, a designated geography which would be subject to a set of policy tools designed to promote innovation.
- **District Administrator.** Critically, the IDEA District would not be managed by Sidewalk Labs but instead would be overseen by a District Administrator (proposed to be Waterfront Toronto).
- **Mandate of the Administrator.** The district administrator would set the innovation and development priorities for the district, alongside the three levels of government, and would be empowered with a set of tools to ensure that those priorities are achieved.
- **Innovation and Funding Partner.** The public administrator would engage Sidewalk Labs for the delivery of a series of discrete capabilities that would enable progress towards shared objectives.
- **Financial Proposal.** The partnership structure is supported by a comprehensive financial relationship designed such that incentives are aligned, risks are managed, and that Torontonians receive the benefit generated through the project.

PART 1

Innovative Design and Economic Acceleration (IDEA) District

Simon Brandler
Director of Public Policy Innovation

7

A New Innovation Strategy for the Waterfront

The IDEA District represents a new geographically-specific strategy to drive responsible innovation in the eastern waterfront, today and in the future.

Achieving the goals of the MIDP will require a multi-faceted strategy for innovation and development on the waterfront — a strategy that, to a greater degree than in other parts of the City, enables and rewards successful experimentation, and in turn, demands more from developers to address public priorities.

The Innovative Design and Economic Acceleration (IDEA) District proposes to accomplish this by setting out a comprehensive vision and a new set of rules and incentives for spurring innovation and development across the eastern waterfront.

The concept of the IDEA District represents just one approach for achieving the desired outcomes and will be proposed in the MIDP for the consideration of the government and public.



The IDEA District Supports Strong Public Oversight and Control

The establishment of the IDEA District will ensure that the public sector is given a clear mandate as well as the resources needed to achieve revitalization objectives.

The MIDP proposal incorporates a series of commitments that differentiate it from most other development proposals. Critically, enabling the range of urban innovation contemplated in the MIDP will require dedicated public oversight and control.

- The ambition of the proposed transaction follows from the ambitions of Waterfront Toronto's RFP, the Plan Development Agreement, and of the governments that comprise Waterfront Toronto.
- As laid out in prior volumes of the MIDP, the result is a plan that offers an opportunity for the City of Toronto, the Province of Ontario, and the people of Canada to demonstrate how to leverage cutting-edge technology and design to address fundamental urban challenges.

The project cannot succeed if the public does not trust that its interests are being fully protected. To ensure public accountability, Sidewalk Labs proposes that a public sector administrator be named to lead the IDEA District and oversee the project.

- This public administrator would be given a clear mandate and sufficient delegated authority to act nimbly and advance the overall project, including ensuring the full implementation and adequate performance of the new approaches to technology, development, and infrastructure.

Further, the MIDP contemplates a vision for the eastern waterfront in which Sidewalk Labs plays a limited role, and instead is designed to invite engagement from a wide range of third parties, today and in the future.

- An empowered public sector administrator would position the waterfront and the city of Toronto on the whole as a centre for innovation, allowing local innovators a place to apply their ideas and drawing innovators from across Canada and the around the world to contribute to the future development of the waterfront and the new economic engine enabled by the IDEA District.

Principles of the IDEA District

The concept of the IDEA District is designed based on a series of principles, and will support a package of modified rules, authorizations, and incentives that would apply in the geography.

Active Government Oversight.

The development of Quayside and the eastern waterfront is a multiphase public project conceived and implemented to meet well-defined policy objectives. Further development is, and must remain, subject to clear public directives and proper oversight by the federal, provincial, and city governments.

A Predictable Policy Environment.

To invest the resources required to achieve the vision laid out in the MIDP and to develop the broader waterfront, Sidewalk Labs, vertical developers, and others operating in the district require certainty that the conditions necessary for success are in place. Advancing this initiative is impossible without a clear understanding of the rules governing the Quayside project or the IDEA District as a whole.

A Responsive Regulatory Approach.

Using cutting edge urban design and technologies as a catalyst for innovative development, programming, and service delivery on the waterfront requires a regulatory environment that affords developers additional leeway to test out new solutions, offers flexibility in implementation, and can adapt as circumstances change or as key milestones are achieved.

A Workable Operational Structure.

The innovative systems needed to carry out the MIDP's vision—from administering new systems for reducing traffic congestion, to programming the newly created public spaces—require management and oversight by appropriate, accountable, and dedicated community-based governance structures.

Accountability and Incentives to Match Higher Performance Demands.

The regulatory structure must link accountability and incentives to performance. This means increasing the requirements on new developments to address key priorities, like affordability and sustainability. It also means holding developers accountable for those higher standards, through incentives and penalties.

Recognizing the Value of Scale.

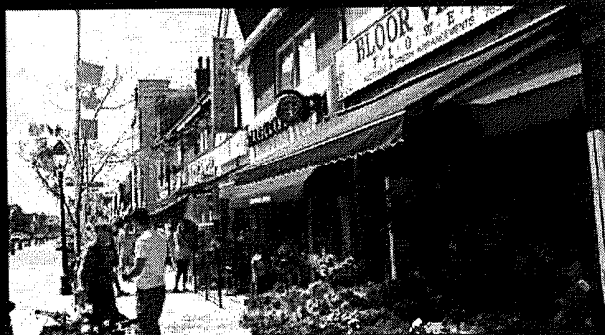
The viability of the MIDP, specifically components requiring significant, up-front infrastructure investments, depends on sufficient scale. These advances cannot proceed or receive funding on a development-by-development basis, and must be integrated into a broader strategy for the eastern waterfront.

Building on Existing Geographically-Targeted Strategies

The proposed structure and components of the IDEA District build on strategies that have been demonstrated to spur revitalization in Toronto, Vancouver, and in other cities around the world.

Creation of Business Improvement Areas

Bloor West Village



In 1970, Canada pioneered the use of Business Improvement Areas, when the business owners of Bloor West Village approved the first BIA. The Ontario BIA law became a national and international model for how to upgrade local services, improve public space, and otherwise breathe new life into beleaguered commercial districts.

Revitalization of Former Industrial Areas

Granville Island, Vancouver



In 1972, Granville Island in Vancouver began its turnaround from a derelict former industrial area to a vibrant centre of arts and commerce. In a targeted strategy, Canada Mortgage and Housing Corporation assumed control of development and infrastructure; negotiated a modified regulatory framework with the City of Vancouver; and cultivated a spirit of public-private partnership and experimentation that turned the area into a dynamic world-class community.

Enterprise Zones

London Docklands

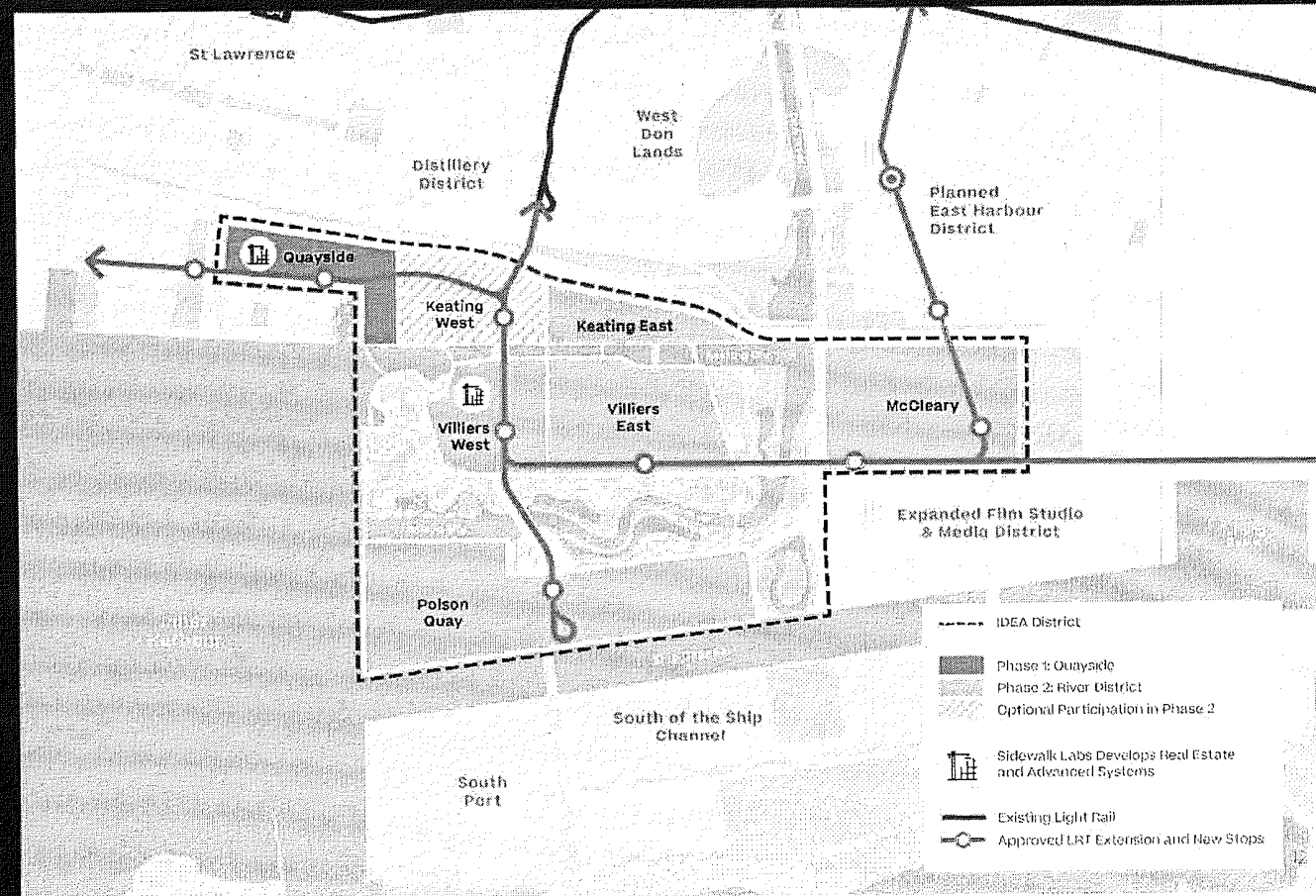


In the 1980s, the United Kingdom established an "Enterprise Zone" in the London Docklands. The government eased certain legal restrictions in the zone, created incentives for desirable development, and assigned overall responsibility for the then-abandoned waterfront to a powerful administrator, the London Docklands Development Corporation. The result is that the Docklands, which includes Canary Wharf, is now one of the most prominent and successful business districts anywhere.

Proposed Geography

The IDEA district would encompass 190 acres, less than one third of the eastern waterfront.

- Within the district, a package of carefully targeted regulatory reforms, innovation requirements, procurement standards and governance structures would apply.
- The vast majority of land in the district (78%) is publicly-owned. The IDEA district would encompass only those publicly-owned parcels.
- The landowners of the remaining 22% of privately-owned parcels would be able to voluntarily opt-in to the IDEA District.



Promoting Innovation and Accelerating Inclusive Growth

The IDEA District combines three core elements to deliver on the project's objectives: a public administrator, an "Innovation Framework", and a set of financing tools.

A strong public administrator in an oversight role	<ul style="list-style-type: none"> Leads innovation and development within the project geography, with the mandate to oversee and steer key real estate, infrastructure, and technology decisions. Accountable to the public; receives well-defined powers over development activity and the deployment and operation of innovative infrastructure and systems within the jurisdiction; and obtains priority treatment when interacting and seeking approvals and cooperation from other government agencies.
An Innovation Framework designed to facilitate and foster innovative development and achieve Waterfront Toronto's objectives in the eastern waterfront.	<ul style="list-style-type: none"> Planning Act and municipal process for development application approval to be followed. New policies are designed to spur inclusive economic growth and social progress throughout the waterfront, and to hold developers to higher performance standards in sustainability, mobility, affordability, and other priority areas. Three categories of adjustments and reforms: (1) adjustments to certain legal requirements (e.g., to allow timber buildings above six storeys); (2) enhanced requirements for new developments; (3) legal authorization for management entities. Outlines the conditions necessary for all parties operating in the district to achieve success.
A set of financing tools would enable the project to leverage its own value for implementation	<ul style="list-style-type: none"> Designed to propel growth and technological advancement across the geography without diverting scarce public resources from other priorities or from elsewhere in the City or the Province.

Public Oversight: A District Administrator

A strong public administrator will serve in an oversight capacity and will ensure all parties acting in the IDEA District adhere to innovation and development priorities.

The Administrator's primary function is to deliver the priority outcomes for the project: job creation and economic development, sustainability and climate positive development, housing affordability, new mobility, and urban innovation.

The District Administrator's mandate would include:

1. Setting innovation and development objectives for the IDEA District;
2. Consistent with those objectives, imposing additional requirements on developments within the district;
3. Determining whether new developments can access the regulatory relief approved for the district;
4. Performing precinct and infrastructure planning for waterfront development;
5. Certifying development and construction permit applications before their submission to City agencies;
6. Developing a master transportation and infrastructure plan for approval by relevant City authorities, in phases, and giving final approval before construction;
7. Receiving and directing infrastructure charges for the infrastructure proposed for, or built in, the district; and
8. Entering and overseeing agreements with developers, vendors, and partners, including Sidewalk Labs as Innovation and Funding Partner



Waterfront Toronto is Well-Positioned to Serve in this Capacity

Consistent with its roles and responsibilities today, as public administrator Waterfront Toronto would advance the MIDP's innovation agenda without replacing existing government functions or entities.

Advance the MIDP's Innovation Agenda

As District Administrator, Waterfront Toronto is uniquely positioned to ensure the innovations enabled in the IDEA District can achieve the ambitions and objectives of the project—and that opportunities to participate are available to the widest range of third party contributors

Build Upon Existing Responsibilities

Waterfront Toronto is already responsible for several functions of the District Administrator based on statutory and contractual authorities with respect to publicly-owned land, including under its 2006 MOU with the City

- Setting innovation and development objectives for the IDEA District;
- Consistent with those objectives, imposing additional requirements on developments within the district;
- Performing precinct and infrastructure planning for waterfront development;
- Entering and overseeing agreements with developers, vendors, and partners, including Sidewalk Labs as Innovation and Funding Partner.

Further, Waterfront Toronto currently serves in an advisory role for other components of the District Administrator's proposed responsibilities:

- Certifying development and construction permit applications before their submission to City agencies;
- Developing a master transportation and infrastructure plan for approval by relevant City authorities, in phases, and giving final approval before construction

Support Existing Government Entities

The role of the District Administrator will not replace that of any government function or entity. As District Administrator, Waterfront Toronto's existing mandate and accountability to City, Provincial, and Federal governments will ensure even greater alignment with government priorities and objectives for the IDEA District

New Entities to Realize Specific Pillar Innovations

Several of the "pillar" innovations discussed over the last year require new management or funding entities to operate or finance the systems in order to be implemented successfully and achieve their intended objectives.

These entities would help achieve the objectives for revitalization on the eastern waterfront, but would not, and should not, displace the oversight of the City Departments in these areas.

- **Housing:** To increase access to affordable housing options a mechanism to capture additional sources of funding for below market housing is needed
- **Mobility:** The mobility plan calls for an adaptive approach to mobility, including dynamic curbs, demand-based vehicle drop-off and staging areas, curb pricing, etc. To function, they all require direction from, coordination through, and supervision by, a dedicated mobility manager.
- **Public Realm:** Several of the innovative systems planned for the private and public spaces, including for weather mitigation and open space programming, will require active oversight, with an expectation of experimentation, iteration, and adjustment.
- **Sustainability:** Services provided by select advanced infrastructure systems lack public regulatory oversight and will be operated by third parties. A dedicated oversight entity is needed to supervise their operations,
- **Digital Innovation:** To protect data privacy the Digital Innovation plan calls for the creation of a new entity to oversee the review and approval of all digital innovations that propose to use or collect urban data.

→ WATERFRONT HOUSING TRUST

→ WATERFRONT TRANSPORTATION
MANAGEMENT ASSOCIATION

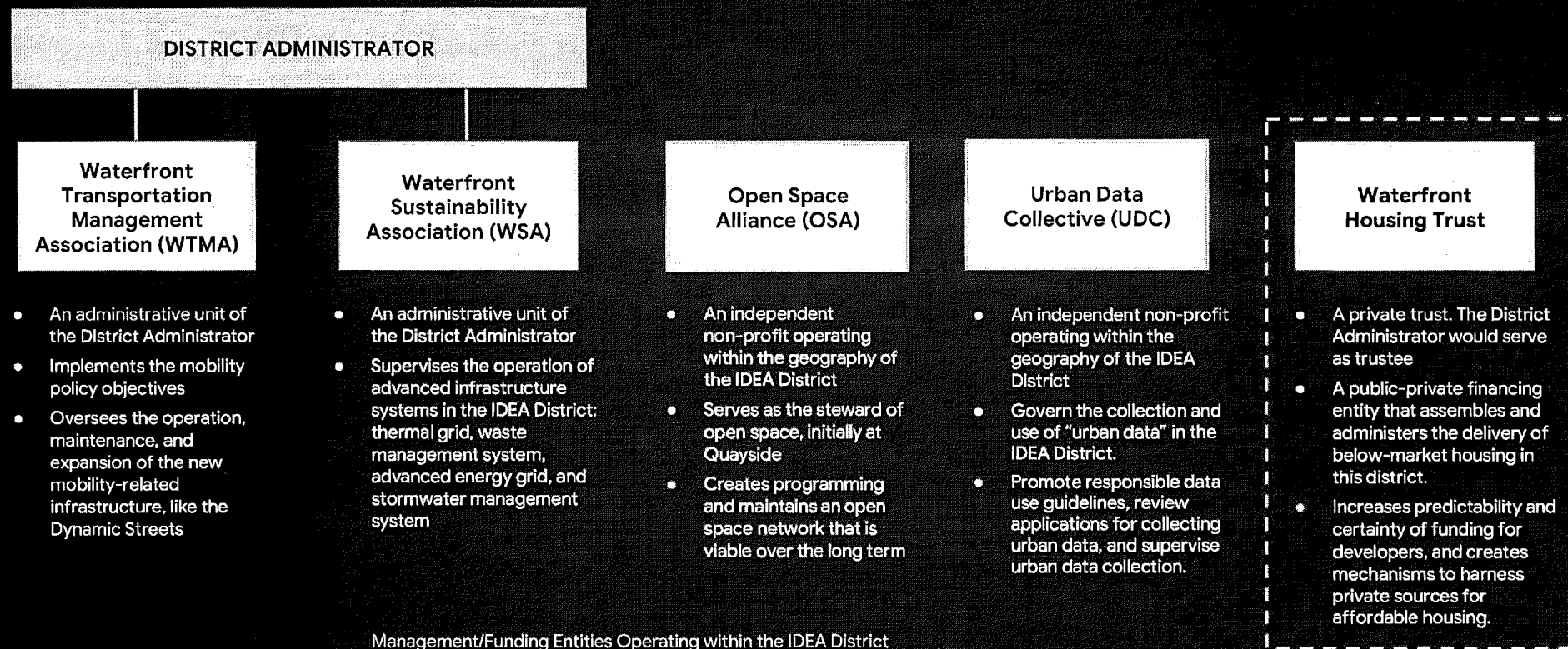
→ OPEN SPACE ALLIANCE

→ WATERFRONT SUSTAINABILITY
ASSOCIATION

→ URBAN DATA COLLECTIVE

An Administrator to Supervise and Coordinate Activities

Each of the new entities varies in its relationship to the administrator, the scope of responsibilities, method of formation, and funding mechanism.



The Innovation Framework

The Innovation Framework will stand as the centrepiece of the IDEA District, encompassing the policies needed to advance the vision set forth in the MIDP and lay the groundwork for sustained innovation and economic growth.

Applying exclusively within the geography of the IDEA District, the framework is designed to foster the necessary conditions for delivering on the promise of the MIDP, and using its success as a catalyst for spurring inclusive economic growth and social progress throughout the waterfront.

MANAGEMENT AND FUNDING ENTITIES

Authorization of the management and funding entities needed to operate or finance the systems proposed for the district (e.g., to operate a Waterfront Housing Trust to improve access to affordable housing)

EXEMPTIONS AND PERMISSIONS

Adjustments to specific regulatory requirements (e.g., to allow timber buildings above six storeys)

INNOVATION DESIGN STANDARDS AND GUIDELINES

Development requirements that would proceed based on the administrator's powers over the development process

Supporting Pillar Initiatives in an Innovation Framework

Sidewalk Labs has identified a set of reforms or amendments that would comprise the Innovation Framework and are designed to both support implementation of innovations proposed in the MIDP and drive innovation among third parties in the future.

For each Pillar area, the MIDP will include an identified set of reforms that reflects the principles of the IDEA District. This set of reforms was developed following a close review of the applicable regulatory schemes, and is necessary for realizing innovations proposed in the MIDP.

For example, the MIDP offers a detailed strategy for constructing buildings in Quayside that are more economical to build, more affordable to live in, and more sustainable from an environmental perspective.

An inventory of policy and regulations implicated by these strategies include permitting mass timber wood buildings and related advances; authorizing a pilot to shift towards an Outcome-Based Building Code; and permitting the use of Efficient Unit designs, among others.

In addition to detailing the inventory of policies and regulations implicated by the MIDP proposals, the Innovation Framework would be designed to invite innovation among a wide range of third party contributors in the future and support the development of innovations that we cannot yet imagine today.

Ex. Inventory of policies and regulations implicated by the Buildings & Housing strategy detailed in Vols 1 and 2

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management Entities/Funding		
Waterfront Housing Trust		Proposal for the creation of a trust in later phases of waterfront development.
B. Permissions/Exemptions		
Mass Timber Wood Buildings and Related Advances	Ontario Regulation 332/12 (Division B) of Ontario Building Code	(1) New regulation from Ontario Cabinet permitting 10-storey timber building, alternative glazing, internal wall materials, and adaptable lift spaces; OR (2) Determination by City Building Department that the proposed timber construction and related advances achieves the same or better level of performance to currently permitted materials
Flexible Interior Wall System (including low voltage power system)	Ontario Regulation 332/12 (Division B) of Ontario Building Code City of Toronto Zoning Bylaw	(1) New regulation from Ontario Cabinet to permit alternative flexible interior wall system OR (2) Determination by City Building Department that the alternative flexible interior wall system achieves the same or better level of performance to currently permitted materials
Energy Over Ethernet	OEI Act, Electricity Act, Regulation 694/99, Ontario Building Code Act and Building Code	Provincial approval to deploy energy-over-ethernet, including the use of direct current, under the Ontario Building Code and section 113 of the Electricity Act and associated regulations.
Outcome Based Building Code	Environmental Protection Act City of Toronto Noise Bylaw City of Toronto Zoning Bylaw	Amendment of Zoning Bylaw to allow wider range of uses in connection with the use of an alternative outcome based building code in the IDEA District. Developer requirements to employ building systems to implement outcome based building code
Stoa	Provincial Land Use Compatibility D-6 Guidelines City Zoning Bylaw Environmental Protection Act ss. 9 and 14 City of Toronto Noise Bylaw	Amendment to the Zoning Bylaw to expand the range of space uses without additional permissions.
Efficient Units	City of Toronto Affordable Rental Housing Guidelines Ontario Building Code	Authorization to build units smaller than the current minimum unit size under Affordable Rental Housing Guidelines of the City of Toronto Affordable Housing Office, when providing a mix of housing options, including larger sized units of two-, three-, and four-bedroom.
Affordable Housing Portfolio Funding		Approvals from Federal government and the City of Toronto to receive housing funding for a portfolio of properties, rather than development-by-development.
C. Innovation Design Standards and Guidelines		
Fip Fee for Sale of Condos	N/A	New requirement that condos in the IDEA District pay a percentage of the sale price as a fee to the Waterfront Housing Trust to fund affordable housing.

See appendix slides for the complete inventory by Pillar

PART 2

Roles & Responsibilities

Steven Turell
Associate Director of Development

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Sidewalk Labs as Innovation and Funding Partner

Sidewalk Labs' proposed role as Innovation and Funding Partner capitalizes on its own strengths as an organization while maximizing the ability of third parties to contribute to and benefit from the economic ecosystem of the project.

Sidewalk Labs would serve as a catalyst for innovative urban development — bringing expertise, financial resources, economic development assets, and a willingness to take the risks needed to pioneer a forward-looking, integrated, progressive, and sustainable model for improving urban life.

INNOVATION PARTNER

- Partner with Waterfront Toronto to achieve innovation objectives
- Deliver Quayside as a model
- Deliver advanced systems for Quayside and Villiers West
- Deploy key technology products

FUNDING PARTNER

- Serve as an economic development catalyst by creating the conditions for a new urban innovation campus at Villiers West
- Provide optional financing and credit support for critical infrastructure
- Fund select at-risk innovation investments



The MIDP Proposes Five Roles for Sidewalk Labs

Each of the roles contemplated in the MIDP is designed to leverage Sidewalk Labs' capabilities and expertise to support the District Administrator and enable the project to achieve the shared objectives of Sidewalk Labs and Waterfront Toronto.

As District Administrator, Waterfront Toronto would engage Sidewalk Labs as its Innovation and Funding Partner.

The proposed Innovation and Funding Partnership contemplates five roles for Sidewalk Labs, designed to complement the responsibilities of the District Administrator and enable the project to achieve the objectives set forth in the MIDP.

1. Innovation Planning, Design, and Implementation

Provide advisory, technical, and management services to the District Administrator in order to implement the MIDP's innovation strategy

2. Development of Real Estate and Advanced Systems

In partnership with local development entities, Sidewalk Labs would lead development to prove out the viability of its innovation agenda at Quayside and enable the development of a new hub for economic growth on an accelerated timeline

3. Technology Deployment

Deploy a set of critical technologies, some of which would be "Purposeful Solutions"—innovations needed to deliver on the MIDP targets for which no alternatives currently exist

4. Economic Development Catalyzation

To capitalize on, and catalyze, the enormous economic potential inherent to the project, Sidewalk Labs would invest in economic development initiatives with potential for broad impact

5. Enabling Infrastructure Financing

Provide optional financing to accelerate delivery of the LRT system, and advance development of municipal and advanced infrastructure systems necessary to meet project goals

The MIDP Proposes Five Roles for Sidewalk Labs

Sidewalk Labs' proposed role capitalizes on its own strengths as an organization while maximizing the ability of third-parties to contribute to and benefit from the economic ecosystem of the project.

1. Innovation Planning, Design, and Implementation
2. Development of Real Estate & Advanced Systems
3. Technology Deployment

The business plan and governance structure underpinning the MIDP leverage areas in which Sidewalk Labs is uniquely positioned to contribute and are core to Sidewalk Labs as a company and partner

-
4. Economic Development Catalyzation

Given the importance of these initiatives to the mission of Sidewalk Labs and the success of the project, Sidewalk Labs has made a series of commitments specifically to spark economic development

-
5. Enabling Infrastructure Financing

Sidewalk Labs is also prepared to offer optional financing for certain systems in order to accelerate implementation and fill market gaps where they may exist

Role 1: Innovation Planning, Design, and Implementation

Sidewalk Labs would provide technical advice, innovation planning, and project management services to the District Administrator.

Sidewalk Labs would support in devising and implementing a comprehensive innovation and development strategy in areas where Sidewalk Labs is undertaking direct risks, where the company can augment the capacity or resources of the District Administrator, or has special expertise, particularly with respect to the technical specifications, deployment, iteration, and integration of advanced infrastructure systems and performance outcomes.

A core element of this role is building the capacity of the District Administrator and other public sector partners and engaging in knowledge transfer.

Over time, this would reduce the need for, and the scope of, Sidewalk Labs' own responsibilities.

Planning and Design

Provide technical advice and systems integration in support of precinct planning processes, specifically related to development requirements for advanced systems and land-use strategies

Provide planning services for municipal and advanced infrastructure to be incorporated in specific planning applications

Collaborate on requirements and specifications for development, necessary to achieve the sustainability, affordability, and other related objectives of the IDEA District

Implementation and Operation

Manage design for traditional municipal infrastructure at Quayside and Villiers West and provide support for horizontal infrastructure, as needed

After Quayside and Villiers West, coordinate municipal infrastructure designs prepared by the administrator with buildings and advanced infrastructure systems

Lead development of advanced infrastructure systems at Quayside and Villiers West and support the administrator in the procurement of operators for other parts of the IDEA District

Offer technical assistance to the District Administrator to support the management entities administering new district systems

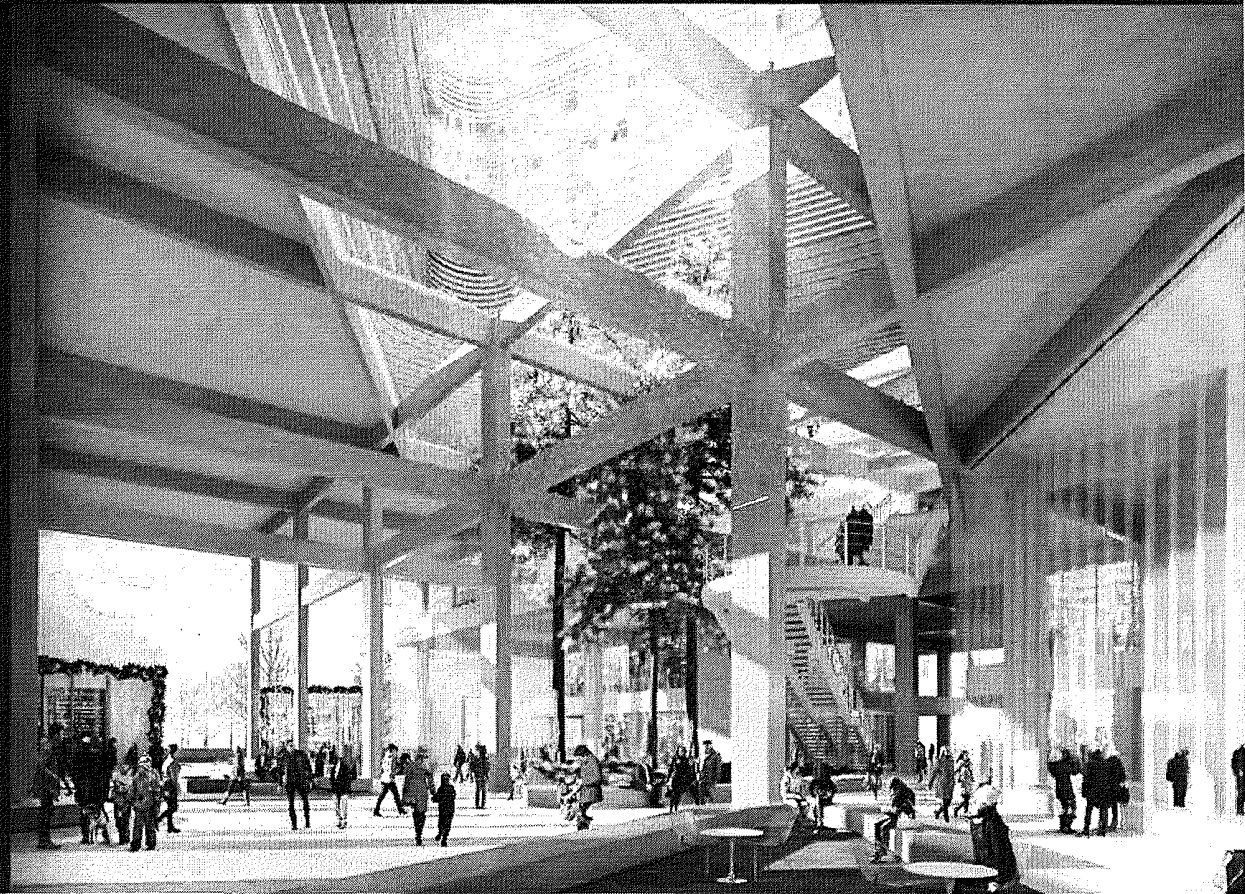
Role 2: Development of Real Estate at Quayside and Villiers West

Sidewalk Labs is proposing to deliver, in partnership with local development partners, approximately 15% of development within the IDEA District.

AT QUAYSIDE, Sidewalk Labs is seeking to deliver a national and global model to encourage market transformation towards climate-positive city-building and achieve a range of specific public objectives, from affordability, to accessibility, and mobility.

IN VILLIERS WEST, Sidewalk Labs seeks to undertake a major economic development project, a new urban innovation campus anchored by Google's Canadian headquarters and an Urban Innovation Institute.

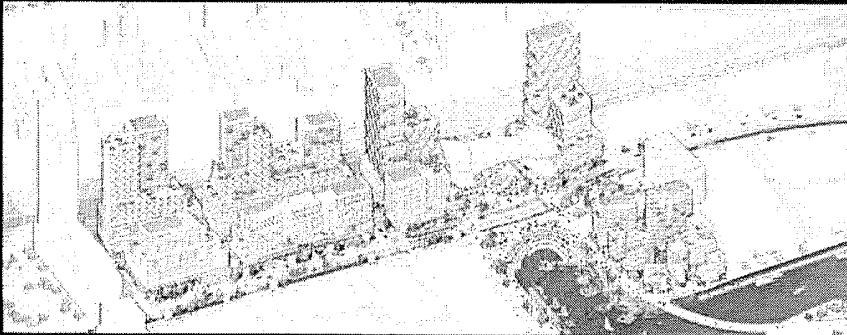
Together, these projects represent a core element of Sidewalk Labs' role as Innovation and Funding Partner for achieving the objectives for Waterfront Toronto detailed in the RFP, and for catalyzing growth across the eastern waterfront.



Activating the Waterfront at Quayside and Villiers West

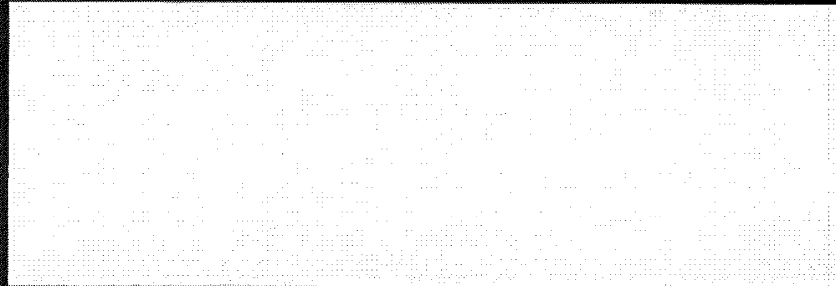
In partnership with local developers Sidewalk Labs would lead the development of Quayside and Villiers West in order to (a) demonstrate the benefits and feasibility of innovative approaches, and (b) catalyze specific economic development opportunities.

Quayside Neighbourhood Model



- **Program:** Ten buildings on five parcels comprising approximately 2.65 million square feet of developed space
 - Approx. 2,500 housing units, about half of which would be purpose-built rental
 - Sets aside 40 percent of residential floor space to below-market or affordable units
 - Non-residential uses would account for more than 30 percent of gross floor area, resulting in approximately 2,700 full-time permanent jobs and 9,000 construction jobs
- **Implementation:** Sidewalk Labs proposes to execute the development of Quayside with local development partners, structuring a partnership to ensure that the site's innovation agenda is not compromised

An Innovation Campus at Villiers West



- **Program:** 2.7 million square feet of developed space
 - Approx. 1,800 housing units
 - 40% of residential floor space to below-market or affordable units
 - Approx. 1.4 million square feet of commercial space
 - Buildings would be made entirely of tall timber
- **Implementation:** Sidewalk Labs proposes to execute the development of Quayside with local development partners, structuring a partnership to ensure that the site's innovation agenda is not compromised

Role 3: Technology Deployment

Sidewalk Labs would identify or develop key technological solutions for advancing proposals in MIDP, drawing on a range of solutions, including software, hardware, and other products and services that target urban priorities, from sustainability to affordability.

To realize the vision of the MIDP and implement its components, Sidewalk Labs would survey and evaluate the innovations currently in research, development, or in the marketplace to determine their relevance and applicability to the project.

- **In the majority of circumstances**, the technologies needed to advance the project would be purchased, commissioned, or licensed from existing vendors.

For these solutions, Sidewalk Labs' responsibilities would be limited to those encompassed within Role 1, as a technical advisor and procurement lead to the District Administrator and to the management entities subordinate to it.

- **Where a key solution does not yet exist in the market**, Sidewalk Labs is committed to developing it — by identifying appropriate technology partners to carry out the work, by integrating and enhancing existing solutions, or by undertaking the research and development itself to create and test the solution for deployment as part of the project.

Sidewalk Labs would develop **"Purposeful Solutions"** in-house—technological innovations that, at the time of development, could objectively and impartially be shown to have no suitable alternative at the same level of maturity or addressing a comparable breadth of solutions to the project needs.

Sidewalk Labs Proprietary and Confidential

Principles Guiding Tech Deployment

- **Integrate privacy considerations from the outset.** All technology deployed in the project area would adhere to the Civic Data Trust's responsible data use guidelines
- **Support collaboration with third parties, particularly local players.** Implementation Agreements would be designed to support Canada's capacity to build and retain IP locally
- **Promote open technology standards and modularity** by developing products that adopt open technology standards and modularity, and recommending or sourcing products from third parties that conform to the same principles
- **Actively promote transparency** and foster a vibrant ecosystem of new applications using urban data among third-party developers and the public

Role 4: Enabling Infrastructure Financing — LRT

Sidewalk Labs proposes to support the planning, design, and implementation of horizontal infrastructure critical to the success of the IDEA District, including (1) Extension of Light Rail Transit; (2) Expansion of municipal infrastructure; and (3) Construction and deployment of advanced infrastructure.

Sidewalk Labs believes that the Waterfront LRT needs to be implemented in advance of the development of individual neighbourhoods in order to achieve the project's objectives, accelerate economic growth, and to achieve the pricing targets and absorption included in this financial model.

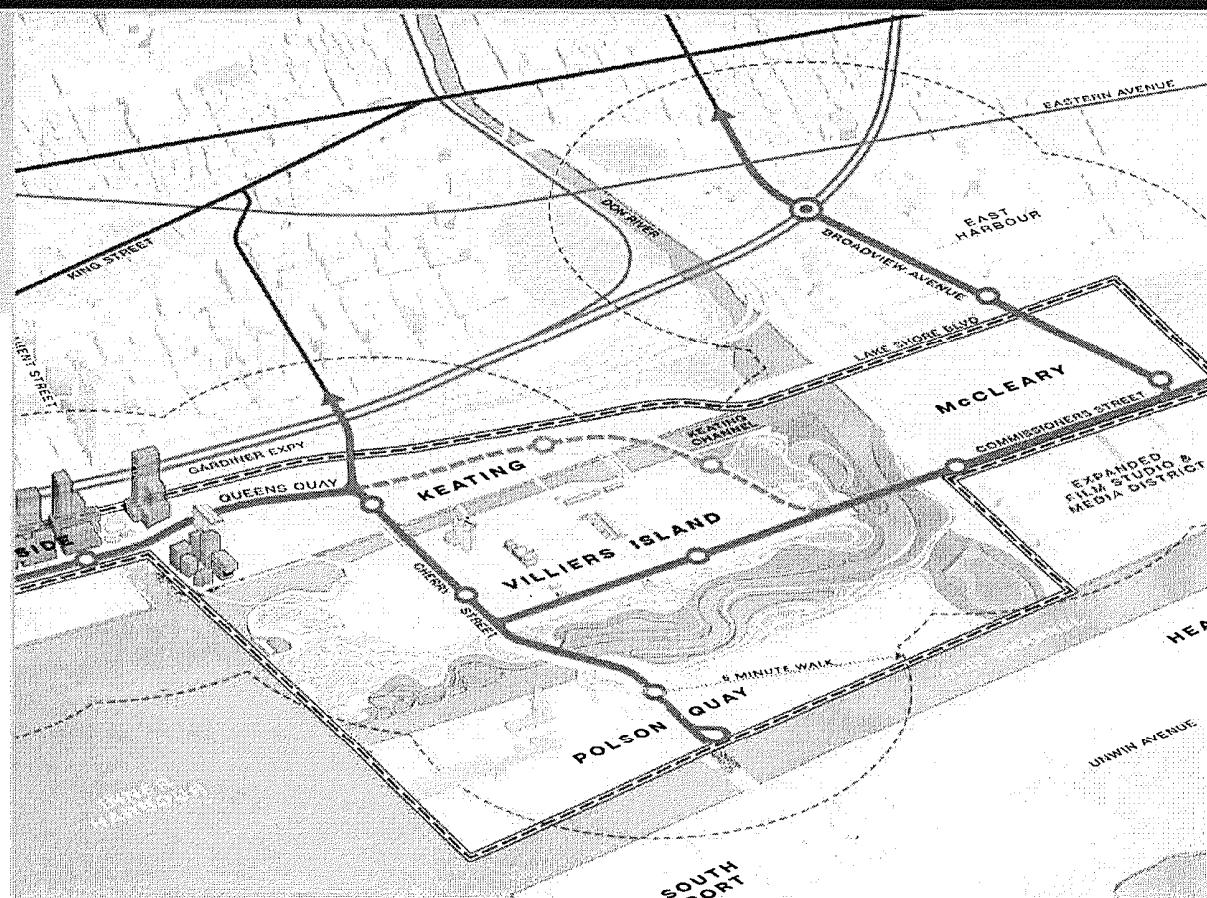
Sidewalk Labs is open to offering its assistance, including contributing up to \$100MM, to unlock the financing sources required to accelerate delivery of the LRT system.

At present, traditional financing methods are proposed to fund the Union Station tunnel to Queens Quay East. For the remainder of the network, a Tax Increment Financing (TIF) structure is contemplated, whereby incremental property taxes are securitized to enable upfront funding of all capex required to build out the LRT network and then used to pay back capital providers over time.

Extension of
Light Rail Transit

Expansion of
Municipal
Infrastructure

Construction
and Deployment
of Advanced
Infrastructure



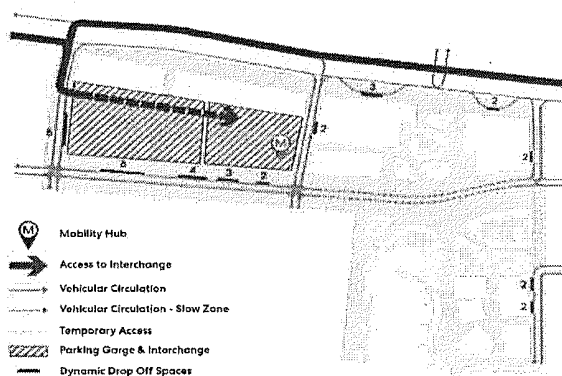
Role 4: Enabling Infrastructure Financing — Municipal

Sidewalk Labs proposes to support the planning, design, implementation of horizontal infrastructure critical to the success of the IDEA District, including (1) Extension of Light Rail Transit; (2) Expansion of Municipal Infrastructure; and (3) Construction and Deployment of Advanced Infrastructure.

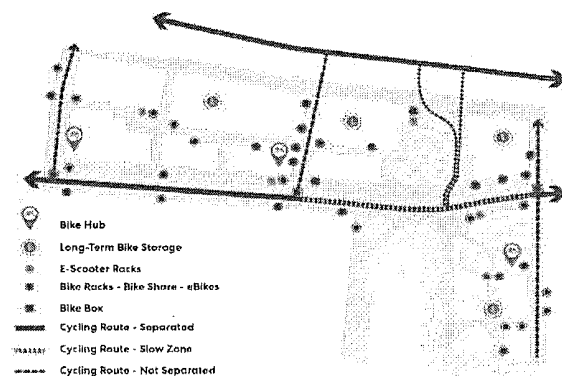
Sewers, roads, public spaces, and other traditional forms of municipal infrastructure have been the backbone of city-building for centuries. With little funding for this crucial infrastructure in the City's five-year Development Charge Background study, Sidewalk Labs is prepared finance the necessary infrastructure, as necessary, to accelerate construction.

- Sitework (demolition, ground improvement, remediation, grading)
- Underground Utilities (domestic water, sanitary sewer, storm drain conveyance)
- Public Realm (finish grading, trees, landscape planting, paving, furnishings, lighting, site civil, digital infrastructure, audio/visual equipment, security, and signature features)
- Shoreline (lakefill, dockwall replacement and repair, and revetments)
- Bridges (pedestrian and vehicular bridges, exclusive of bridges associated with LRT improvements)

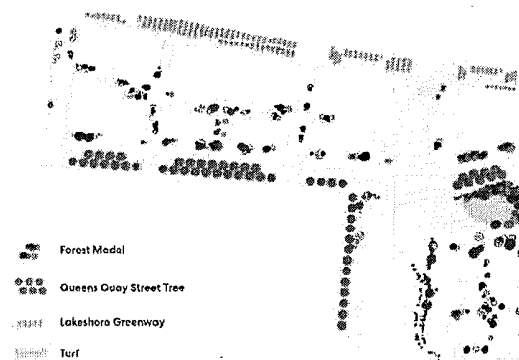
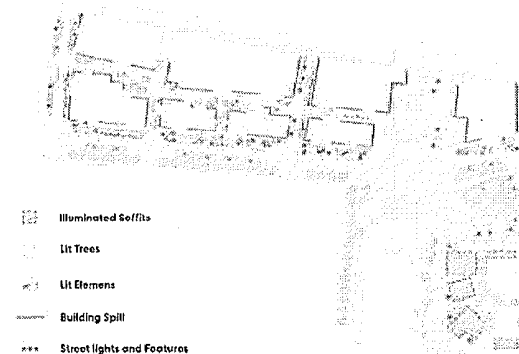
Extension of Light Rail Transit



Expansion of Municipal Infrastructure



Construction and Deployment of Advanced Infrastructure



Role 4: Enabling Infrastructure Financing — Advanced Systems

Sidewalk Labs proposes to support the planning, design, implementation of horizontal infrastructure critical to the success of the IDEA District, including (1) Extension of Light Rail Transit; (2) Expansion of Municipal Infrastructure; and (3) Construction and Deployment of Advanced Infrastructure.

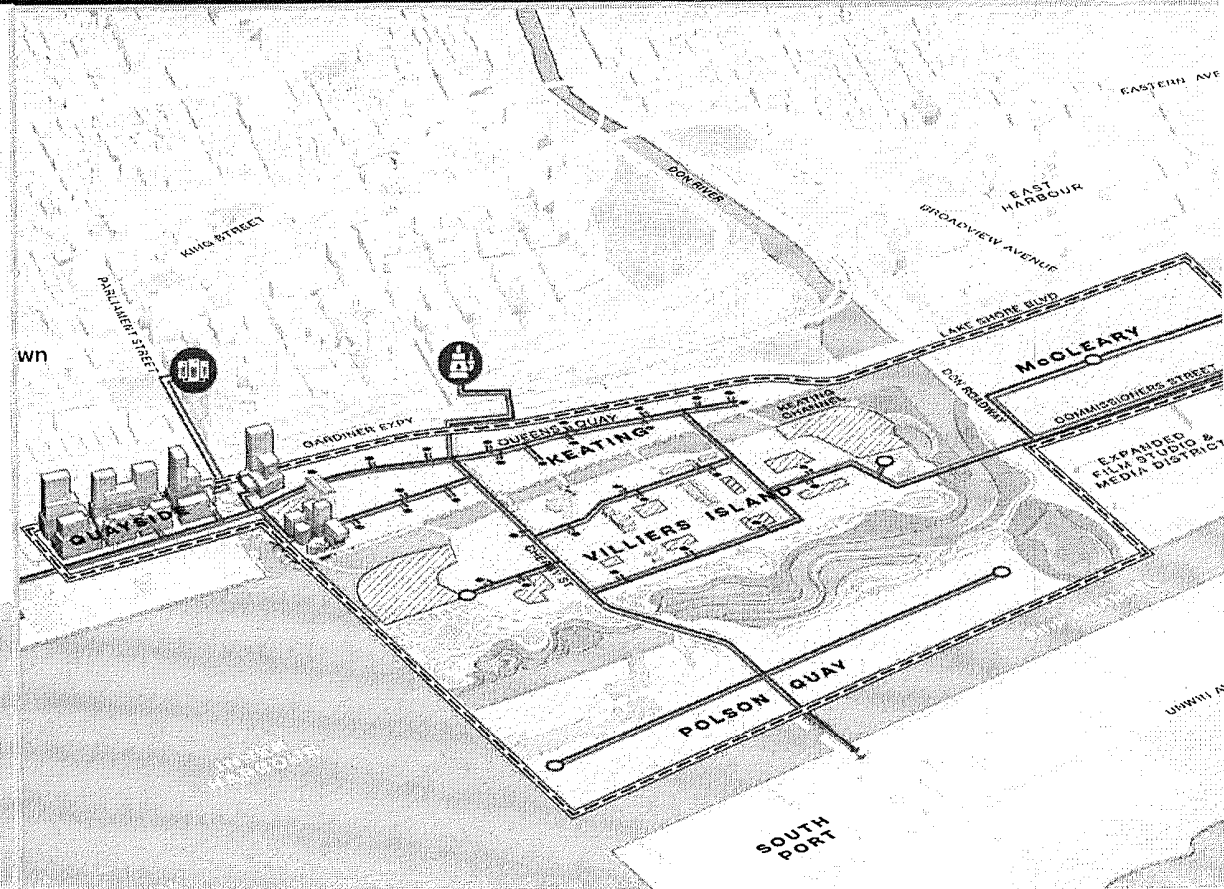
In order to meet the sustainability and mobility objectives of the IDEA District, Sidewalk Labs will deliver a series of Advanced Infrastructure systems including an Advanced Power Grid, Thermal Grid, Waste Collection System, Stormwater Management System, Dynamic Road Infrastructure, and Freight Delivery System. A Digital Network will be delivered by Waterfront Toronto's Broadband Partner.

- No use of public funds above the cost of a standard development project
- Advanced Infrastructure systems will not replace a City-run utility service
- Sidewalk Labs has created an infrastructure investment vehicle to fill a market gap in the ability to provide competitive financing for these new and advanced infrastructure systems

Extension of
Light Rail Transit

Expansion of
Municipal
Infrastructure

Construction
and Deployment
of Advanced
Infrastructure



Role 5: Economic Development Catalyzation

In order to capitalize on, and catalyze, the enormous economic potential inherent in the vision of the project, Sidewalk Labs will invest in a series of economic development initiatives that will benefit both the project area and Toronto writ-large.

Google Headquarters: To spark development beyond Quayside, Alphabet would establish a new Canadian headquarters for Google on the western edge of Villiers Island. Adjacent to a planned LRT stop and Promontory Park, the new technology headquarters would serve as an anchor, drawing talent and companies to Villiers West to support a new business and innovation district at the waterfront.

Urban Innovation Institute: As a second economic catalyst for Villiers West and the broader Eastern Waterfront, Sidewalk Labs would provide physical space and seed funding for a new, cross-disciplinary Urban Innovation Institute. Bringing together urbanists and technologists, the new academic institution would serve as a focal point for a new urban innovation cluster. The Urban Innovation Institute is envisioned as an independent, not-for-profit organization, located within the campus.

Venture Fund: Sidewalk Labs would provide seed funding of for a venture fund that supports early-stage local enterprises working in urban innovation-related fields. This fund would support development of a local investment ecosystem to help Canadian startups and small businesses scale, and enables the region to retain talent and IP locally.

Tall Timber Factory: Sidewalk Labs would plan to establish, with partners, a factory in Ontario to process mass timber buildings, creating a library of building parts that could be combined in thousands of permutations to ensure design excellence, and developing a digital management system that coordinates the entire supply chain from conception to completion.



Summary: Roles and Responsibilities

Successful implementation of the proposals including in the MIDP, including the establishment of the IDEA District, will require close coordination among Sidewalk Labs, Waterfront Toronto, and government partners, and will expand opportunities for participation by a wide range of partners.

Sidewalk Labs

- Innovation Planning, Design, and Implementation
- Real Estate Development (Quayside & Villiers West)
- Technology Deployment
- Optional Infrastructure Financing
- Economic Development Catalyzation

District Administrator

- Lead the IDEA District with oversight of management entities and Innovation Framework
- Act as lead planning entity for Precinct Plans, Master Infrastructure Plans, Precinct Level Infrastructure Plans, By-Laws, and OPAs
- Lead RFP progress for public parcels
- Manage construction of municipal infrastructure
- Co-lead LRT delivery with TTC

City, Provincial, and Federal Governments

- Enable IDEA District with modified regulatory framework
- Empower Waterfront Toronto as IDEA District administrator, and maintain continued oversight
- Continue to play existing approval roles with respect to planning and zoning
- TTC to co-lead Waterfront East LRT delivery

Third Parties

- Contractors will compete to construct advanced infrastructure
- Operators will compete to deliver certain aspects of advanced infrastructure
- Real estate developers would compete to develop ~85% of development
- Tech firms would compete to supply all technology solutions (apart from limited number of purposeful solutions).
- Private landowners have optionality to enter into IDEA District construct

Sidewalk Labs' Role in Relation to the District Administrator

Sidewalk Labs' five distinct roles are designed to support the District Administrator in carrying out its responsibilities as IDEA District administrator in both the planning and implementation phases.

PLANNING PHASE

Administrator	Sidewalk Labs
Precinct Plans and Implementing By-Laws	Advise on issues related to IDSG and integration with advanced infrastructure systems, as relates to planning and proposed by-laws; option to utilize digital planning tools to assist precinct planning and develop outcome-based code.
Infrastructure and Transportation Framework Plan (ITFP)	Advise on ITFP, including guidance on analysis and design of mobility, sustainability, and public realm; support for estimation of population and employment; and a framework for proposed advanced infrastructure networks.
Infrastructure and Transportation Master Plan (ITMP)	Support overall planning, including engineering support for advanced infrastructure within each precinct and preparation of ITMP for Quayside and Villiers West as part of the development plan application.
Innovation Development Standards and Guidelines (IDSG)	Develop the technical specifications needed to achieve sustainability, affordability, and related objectives of the IDEA District, including the drafting and later refinement of the IDSG.

IMPLEMENTATION PHASE

Administrator	Sidewalk Labs
Development Call and Land Disposition Mgmt	No role (optional advisory services related to proposed impact of proposed development on Innovation Framework and advanced infrastructure systems)
Cert. of Dev. and Bldg Permit Applications	Advise on the compliance of development proposals with mandatory IDSGs and integration with advanced systems
LRT Development	No role (financing only)
Mgmt of Municipal Infrastructure Development	Develop the technical specifications needed to achieve sustainability, affordability, and related objectives of the IDEA District, including the drafting and later refinement of the IDSG
Mgmt of Advanced Infrastructure	Prepare preliminary designs suitable to be used as bridging documents for bidding and procurement of private operators for most systems. Lead development at QS and Villiers West
Oversight of New Mgmt Entities	Advise in the establishment and operation of new management entities and the advanced systems they would operate
Reports on IDEA District Progress	No role



Sidewalk Labs' Commitments

Sidewalk Labs is prepared to make a series of commitments to establish the eastern waterfront as a global leader in using cutting-edge technology and design to achieve significant progress in tackling urban problems and has identified a set of public sector commitments to this end.

Sidewalk Labs

Advance a Bold Innovation Agenda

Sidewalk Labs would harness a range of new solutions for achieving shared urban priorities

Advisory and Mgmt Services

15-year agreement to provide technical services, and planning, design, and implementation services.

Vertical Development of Quayside

to deliver a new model for using cutting edge design and technologies to improve urban life

The Urban Innovation Campus

on Villiers West would be vertically developed by Sidewalk Labs to spur economic development

Horizontal Development

of the advanced systems for Quayside and Villiers West to deliver on Waterfront Toronto's objectives

Deploy Purposeful Solutions

with a commitment to determine a profit-sharing structure for certain Sidewalk Labs technologies

Financing Offers for Infrastructure

including the Waterfront East LRT extension, municipal infrastructure, and advanced systems

Economic Development

including a new Google HQ, tall timber factory, and seed funding for an Urban Innovation Institute and venture fund.

Public Sector

Partnering with Sidewalk Labs

to implement a comprehensive innovation and development strategy

Establishment of the IDEA District

including regulatory adjustments to enable critical infrastructure and innovation strategies

Land at Quayside and Villiers West

Sale of land for Quayside and Villiers West, accounting for Waterfront Toronto requirements

Product Procurement

Source a limited number of Sidewalk Labs' products to enable prototyping and deployment at scale

Partnership Proposal

MASTER INNOVATION & DEVELOPMENT PLAN BRIEFING
ASSISTANT DEPUTY MINISTERS

JOSH SIREFMAN | STEVEN TURELL | SIMON BRANDLER

MICAH LASHER | PINO DIMASCIO

APRIL 16, 2019

Innovation Framework Proposals: Buildings and Housing

An inventory of policies and regulations implicated by the "Buildings and Housing" proposals in the MIDP is included below.

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management Entities/Funding		
Waterfront Housing Trust		Proposal for the creation of a trust in later phases of waterfront development.
B. Permissions/Exemptions		
Mass Timber Wood Buildings and Related Advances	Ontario Regulation 332/12 (Division B) of Ontario Building Code	(1) New regulation from Ontario Cabinet permitting 30-storey timber building, alternative glazing, internal wall materials, and adaptable loft spaces; OR (2) Determination by City Building Department that the proposed timber construction and related advances achieves the same or better level of performance to currently permitted materials.
Flexible Interior Wall System (including low voltage power system)	Ontario Regulation 332/12 (Division B) of Ontario Building Code City of Toronto Zoning Bylaw	(1) New regulation from Ontario Cabinet to permit alternative flexible interior wall system; OR (2) Determination by City Building Department that the alternative flexible interior wall system achieves the same or better level of performance to currently permitted materials.
Energy Over Ethernet	OEB Act; Electricity Act; Regulation 89/99; Ontario Building Code Act and Building Code	Provincial approval to deploy energy-over-ethernet, including the use of direct current, under the Ontario Building Code and section 113 of the Electricity Act and associated regulations.
Outcome Based Building Code	Environmental Protection Act City of Toronto Noise Bylaw City of Toronto Zoning Bylaw	Amendment of Zoning Bylaw to allow wider range of uses in connection with the use of an alternative outcome based building code in the IDEA District. Developer requirements to employ building systems to implement outcome based building code.
Stoa	Provincial Land Use Compatibility D-6 Guidelines City Zoning By-Law Environmental Protection Act ss. 9 and 14 City of Toronto Noise By-law	Amendment to the Zoning Bylaw to expand the range of space uses without additional permissions.
Efficient Units	City of Toronto Affordable Rental Housing Guidelines Ontario Building Code	Authorization to build units smaller than the current minimum unit size under Affordable Rental Housing Guidelines of the City of Toronto Affordable Housing Office, when providing a mix of housing options, including larger sized units of two-, three-, and four-bedrooms.
Affordable Housing Portfolio Funding		Approvals from Federal government and the City of Toronto to receive housing funding for a portfolio of properties, rather development-by-development.
C. Innovation Design Standards and Guidelines		
Flip Fee for Sale of Condos	N/A	New requirement that condos in the IDEA District pay a percentage of the sale price as a fee to the Waterfront Housing Trust to fund affordable housing.

Innovation Framework Proposals: Mobility

An inventory of policies and regulations implicated by the "Mobility" proposals in the MIDP is included below.

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management/Funding Entities		
Waterfront Transportation Management Agency (WTMA)		Authorization to establish a mobility manager for the IDEA District with authority over and responsible for curb pricing, dynamic curb, modular pavement, and other new systems.
Value Capture Financing for the LRT Extension	Tax Increment Financing Act (2006)	Provincial regulations and City of Toronto Designation of Queens Quay LRT extension and other upgrades as a TIF project
B. Permissions/Exemptions		
Curb Pricing	Ontario Highway Traffic Act City of Toronto Act Municipal Code	Amendment to the City of Toronto Act to permit curb pricing.
Rideshare Pickup/ Dropoff/ Staging Zones	City of Toronto Zoning By-law	Zoning Bylaw Amendment to designate adaptive passenger pick-up/drop-off (PPUDO) areas within the IDEA District.
Reduced Parking Requirements	City of Toronto Zoning By-law	Zoning Bylaw Amendment or Development Permit Bylaw to reduce parking requirements within the IDEA District.
Underground Delivery Tunnels	City of Toronto Zoning By-law	Zoning Bylaw Amendment (or variance) to revise the loading requirements. Permissions in the form of encroachment agreements, easements, or other related agreements are required to locate tunnels in the City's right of way.
Adaptive Traffic Signals	Ontario Highway Traffic Act Municipal Code	Amendment to the Municipal Code to permit adaptive traffic signals.
Green Waves	Toronto Guidelines for Pavement Design, Lane Widths, Development Infrastructure Policy and Standards	City of Toronto approval permitting LED lights in pavement to signal green waves.
Dockless Bike-Share Vehicles	City of Toronto Zoning By-law	Zoning Bylaw Amendment to designate formal parking areas for dockless vehicles.
Heated Sidewalks & Bike Lanes	Toronto Guidelines for Pavement Design, Lane Widths, Development Infrastructure Policy and Standards	City of Toronto approval to permit LED lights in pavement to signal green waves.
Integrated Mobility Package		Agreement with TTC and the City to wholesale purchase and repackage TTC fares and rideshare fees as 'mobility as a service.'
People First Street Network	City of Toronto Lane Width Guidelines Ontario Traffic Manual	City of Toronto approval to deviate from existing lane width standards.
Delivery Truck Permits	City of Toronto Municipal Code	Amendment of Municipal Code to require courier/delivery vehicle parking permits within the IDEA District and assigning management responsibility to WTMA.
Eliminate Curbside Parking & Curbed Streets	City of Toronto Municipal Code City of Toronto Zoning By-law City of Toronto Complete Streets Guidelines	Amendment to the Municipal Code and applicable Zoning Bylaw to ease on-street parking requirements and to designate certain streets as flexible, curbless streets.
C. Innovation Design Standards and Guidelines		
Dynamic Curb	City of Toronto Municipal Code	Requirement under the Innovation Framework to establish the features of the dynamic curb.
Bike Lane Access to all Buildings	City of Toronto Zoning By-law	Requirement under the Innovation Framework to ensure bike lane access to all new developments within the IDEA District.
Bicycle Parking and Amenities	City of Toronto Zoning By-law	New requirements under the Innovation Framework requiring new developments in the IDEA District to exceed the bicycle parking and amenity requirements of the applicable zoning bylaw.
Rooftop Landing Pads	Ontario Trespass to Property Act City of Toronto Zoning By-law	New development requirement under the Innovation Framework permitting access for aerial drones and requiring all new developments to provide rooftop landing pads.

Innovation Framework Proposals: Public Realm

An inventory of policies and regulations implicated by the “Public Realm” proposals in the MIDP is included below.

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management Entities/Funding		
Partnership with Nonprofit to Manage New Open Space (Open Space Alliance - OSA)	City of Toronto Collaborative Management Agreement (CMA)	Collaborative Management Agreement between OSA, a new non-profit, and the City of Toronto designating OSA to co-manage and co-fund open spaces and the new systems proposed for them at Quayside.
B. Permissions/Exemptions		
Dynamic, Multi-Purpose Parks	City of Toronto Zoning Bylaw	Amendment to the applicable zoning bylaw to permit the features and uses of the proposed multi-purpose parks.
Shared Rights of Way	City of Toronto Municipal Code	Municipal Code amendment to create a more streamlined process for granting permits for the use of part of a street between the edge of the roadway and street line for a range of uses.
Waterbound-Spaces, including floating barges	Navigation Protection Act Canadian Environmental Protection Act, Fisheries Act, 1985 Canada Shipping Act, 2001, Small Vessel Regulations (SOR 2010-91)	Determination by the Minister of Transport that programmed barges (if deemed a “work” under the Navigation Protection Act) is not likely to substantially interfere with navigation.
Outdoor Comfort: Kit of Parts	City of Toronto Municipal Code	Municipal Code amendment to allow a more significant set of encroachments with or without a requirement to enter into an Encroachment Agreement with the City of Toronto.
C. Innovation Design Standards and Guidelines		
Development Contributions to Open Space Management		New requirement that developments pay an ongoing fee to partially cover operational expenses of public spaces.

Innovation Framework Proposals: Sustainability

An inventory of policies and regulations implicated by the "Sustainability" proposals in the MIDP is included below.

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management Entities/Funding		
Waterfront Sustainability Association (WSA)	N/A	Authorization to establish a for the IDEA District responsible for administering and enforcing all contracts with advanced sustainability systems in the IDEA, such as the advanced power grid.
B. Permissions/Exemptions		
Dynamic Rate Structure	Ontario Energy Board	OEB approval of a regulated customer rate based on joint application with Toronto Hydro or through alternative structure
Advanced Power Grid / Monthly Power Budget Rate Structure	Ontario Energy Board	Amendment to Standard Supply Service Code OR amendment to O. Reg. 95/05 to no longer require compliance with Standard Supply Service Code.
Thermal Grid: Extending Pipes into Right of Way	Toronto District Heating Corporation Act (TDHCA) Public Utilities Act (PUA) City of Toronto Act (COTA)	Absent an agreement with existing thermal grid operator, amendment to PUA to allow pipes under the right of way. Consent from the City of Toronto under the COTA may be required.
Stormwater Management: Features in the Right of Way (at Quayside and at a District Scale)	Ontario Water Resources Act ("OWRA") Planning Act City of Toronto Wet Weather Management Guidelines (2006)	Permissions in the form of encroachment agreements, easements or other related agreements are required to locate facilities and stormwater monitoring equipment in the City's right of way.
Stormwater Management: Billing for Infrastructure	City of Toronto Act (COTA)	City reduction to the portion of the Toronto Water billing attributable to stormwater in the Port Lands.
Pneumatic Waste: System in Public Right of Way (Joint Utility Tunnel)	City of Toronto Act	(1) Council authorization permitting the IDEA District administrator to build the pneumatic waste system through city-owned rights of way; OR (2) Encroachment agreement or easement from the City permitting the tunnel.
Pneumatic Waste	Planning Act City of Toronto Zoning Bylaws	Amendment to City of Toronto Zoning By-laws to reduce the number of loading spaces required for City sanitation pickup and to allow for waste pick-up mixed residential/commercial properties
C. Innovation Design Standards and Guidelines		
Outcome Based Energy Performance Standards	Ontario Building Code City of Toronto Green Standards	Energy performance standards for new developments under the Innovation Framework that would be required for all new development within the IDEA District.
Use of Autonomous Building Management Solutions	Ontario Building Code Act and Building Code; OEB Act; Planning Act; City of Toronto Green Standards	Development requirement that new buildings utilize an autonomous building management system that communicates to the central grid in a standard, published format.
Thermal Grid: Requirement to Connect to the Thermal Grid	Planning Act	Development requirement in the IDEA District to connect to the thermal grid.
Pneumatic Waste: Connection & Use of System		Development requirements under the Innovation Framework to connect to, and use, the pneumatic waste and smart cart system.
Pneumatic Waste: Charging for Waste	City of Toronto Act (COTA) Planning Act Municipal Code	Requirement under the Innovation Framework that new developments opt out of City sanitation services and pay sanitation fees for pneumatic waste system.
Stormwater Management: Credits and Green Infrastructure Fund, Coordination with Private Buildings & Active Controls	City of Toronto Act (COTA) Ontario Building Code City of Toronto Wet Weather Management Guidelines (2006)	Requirement that new developments in the IDEA District cover the costs of stormwater management and coordinate with the administrator on stormwater management measures and a system of purchasing proposed credits.

Innovation Framework Proposals: Social Infrastructure

An inventory of policies and regulations implicated by the "Social Infrastructure" proposals in the MIDP is included below.

MIDP Proposal	Applicable Legislation, Regulation, or Policy	Proposed Authorization or Requirement
A. Authorization for Management Entities/Funding		
N/A		
B. Permissions/Exemptions		
School Site	Planning Act	Agreements with the Toronto District School Board on the size, location and configuration of a new school.
C. New Development Requirements		
Healthy Design and Construction		Urban design guidelines under the Innovation Framework that promotes and enables physical activity and community well-being.
Social Development Plans		Requirement under the Innovation Framework for the submission of Social Development Plans with new development applications.
Health Facilities Planning		Requirement under the Innovation Framework that new developments integrate health facilities planning into planning processes, programmes and projects in the IDEA district.
Community Benefits in Construction	Ontario Infrastructure and Jobs for Prosperity Act City of Toronto Social Procurement Policy	Requirement under the Innovation Framework requiring developers to commit to providing specific community benefits during planning and construction of new developments in the IDEA district.
Neighbourhood Association		Requirement under the Innovation Framework for area residents or businesses to contribute dues to ensure sustainable funding for an independent non-profit neighbourhood association.

Advanced Systems

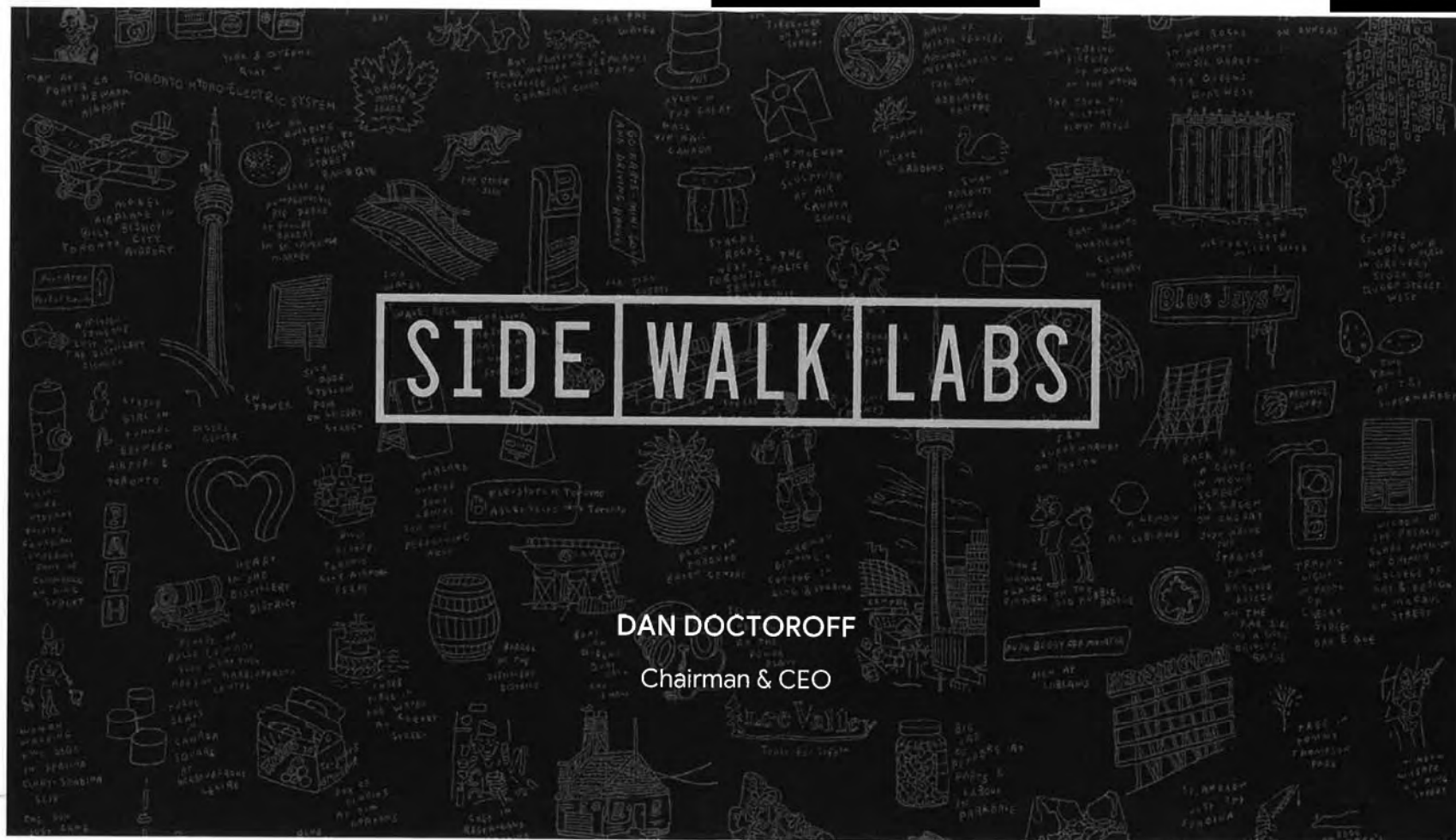
Sidewalk Labs has identified a series of advanced infrastructure systems vital to the success of the Quayside Neighbourhood Model, the Villiers West Urban Innovation Campus, and achieving the significant performance outcomes sought by Waterfront Toronto.

System	MIDP Goals	Description	Benefits
Advanced Power Grid	Climate Positive	An advancement to the typical Toronto Hydro electric service that incorporates rooftop photovoltaic generation, battery storage, possible electric vehicle charging stations and islanding capabilities, and behind-the-meter demand management capabilities utilizing hardware, software, and dynamic real-time rates	Two points of connection to Toronto Hydro distribution grid and ability to island for resiliency; Dynamic hourly rates to reduce peak demand and GHG emissions; Demand management incorporating photovoltaic generation and battery storage; Possible electric-vehicle charging
Thermal Grid	Climate Positive	A neighbourhood- or building-scale thermal energy grid that could incorporate geothermal heat exchange building heat recovery, sewage heat recovery, and other clean energy sources	Fully electrified district hot water, heating, and cooling through a thermal grid using geothermal energy and other clean energy resources to reduce GHG emissions
Waste Management	Improved Waste Diversion & Reduced Impact	A pneumatic waste collection system with dynamic pay-as-you-throw rate structure managed through a user interface at the chute and downstream monitoring of contamination that helps improve waste separation habits	Innovation provides user feedback to improve diversion and limit waste contamination; Efficiencies gained and reduced local traffic and vehicle emissions through centralized collection
Stormwater Management	Enhanced Performance & Green Infrastructure	A district scale management of stormwater through green infrastructure that uses continuous monitoring and active controls to reduce the infrastructure needs of individual buildings and enhance performance in the public realm	Reduced stormwater discharge to municipal infrastructure systems; Efficiencies gained by operating at a district scale; Enhanced greenscape benefits in public realm
Freight Management	Reduced Impact & Climate Positive	A freight delivery system allowing Quayside buildings to rely on a single on-site urban consolidation centre (UCC) for receiving most kinds of deliveries. Deliveries would be sorted at the UCC using both labour and machines, and delivered to residents and on-site businesses using self-driving delivery dollies traveling through tunnels. The freight system would also offer an on-site storage service and transport recyclable cardboard to the UCC for outbound pickup.	Reduced congestion and air pollution; Fewer truck trips reduce GHG footprint; Fewer loading docks enable provision of pedway between buildings; Dramatic reduction in delivery trucks parking and double-parking on the streets enables more space for sidewalks and other uses
Dynamic Street Infrastructure	Enhanced Mobility	Innovative hex paving, dynamic lighting and signage, heated pavements for snow melt, and digital infrastructure for traffic management	Reduced congestion and travel times, safer streets, and more public space for public realm
District Parking Management	Enhanced Mobility	A system offering space-efficient parking both on-site and off-site using equipment allowing high-density parking, attendant-based retrieval of vehicles, and electric-vehicle charging.	Eliminates incentive for residents use personal vehicles when more sustainable alternatives are equally attractive; Allows parking rates for those who must own a car to be lower by using off-site land
Mobility Subscription Package	Enhanced Mobility	A specialized, app-enabled mobility service bundle spanning public transit, ride-hail, parking, shared services, and micro-mobility programs	Enables residents and on-site employees to make better use of mobility options other than the private vehicle by bundling options ranging from public transit to shared bikes to hailed rides in ways that encourage the optimal choice for each trip
Digital Connectivity Network	Ubiquitous Connectivity	A robust, fibre-optic internet network using Super-PON technology that would support ubiquitous connectivity throughout the project area	High performance internet network based on Super-PON standard; Enables flexible operation of advanced technologies and supports multiple carriers

**Pages 415-424
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c) & 20(1)(d)
of the *Access to Information Act***

**Les pages 415-424
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c) & 20(1)(d)
de la *loi sur l'accès à l'information***

Clare #11



Who We Are

SIDEWALK
LABS

The New York Times

TECHNOLOGY

Sidewalk Labs, a Start-Up Created by Google, Has Bold Aims to Improve City Living

June 2, 2015

The Silicon Valley giant is starting and funding an independent company dedicated to coming up with new technologies to improve urban life. The start-up, Sidewalk Labs, will be headed by Daniel L. Doctoroff, an assistant mayor of New York City for economic development and senior adviser to Mayor Bill de Blasio. Mr. Doctoroff jointly conceived the idea for the company, which will be based in New York, with a team at Google, led by its chief executive, Larry Page.

The founders describe Sidewalk Labs as an "urban innovation company" that will pursue technologies to cut pollution, curb energy use, streamline transportation and reduce the cost of city living. To achieve that goal, Mr. Doctoroff said Sidewalk Labs planned to build technology itself, buy it and invest in partnerships.

2

Sidewalk's Journey

STUDIED every prior "smart city" attempt

BUILT a team to bridge the technologist / urban divide

CONVENED working groups with the world's foremost experts

FOCUSED on opportunities for district-scale innovation

Looked Far and Wide for the Perfect Location



Focused in on Toronto

IDENTIFIED TORONTO as the ideal place to bring the vision to life

RECOGNIZED QUAYSIDE RFP as an ideal opportunity

🍁 Gov't Alignment / Waterfront Toronto's Proven Track Record / Proximity to Downtown

🍁 Unequaled Diversity / Tech Ecosystem

🍁 Widening gap between values of inclusivity and reality

A Vision Emerged for a Neighbourhood of the Future

ENABLE meaningful improvement in quality of life for a diverse population

ATTRACT a 21st century economy, including urban innovation

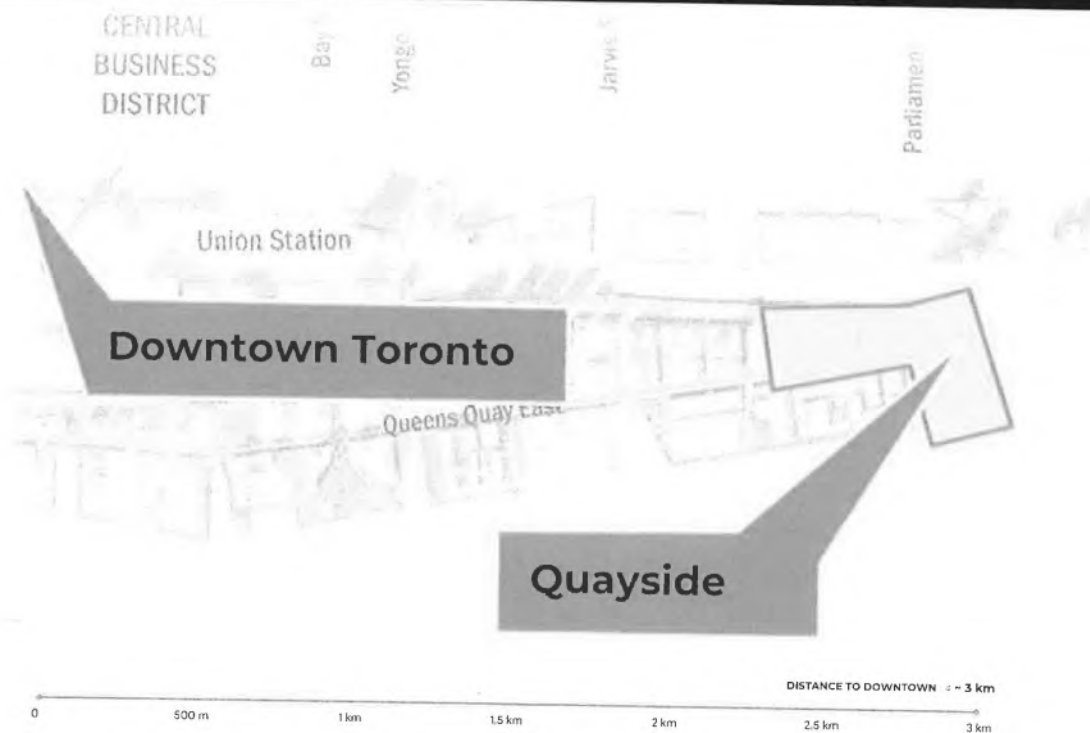
PROVIDE financial viability for long-term investors

SERVE as a replicable model for other cities

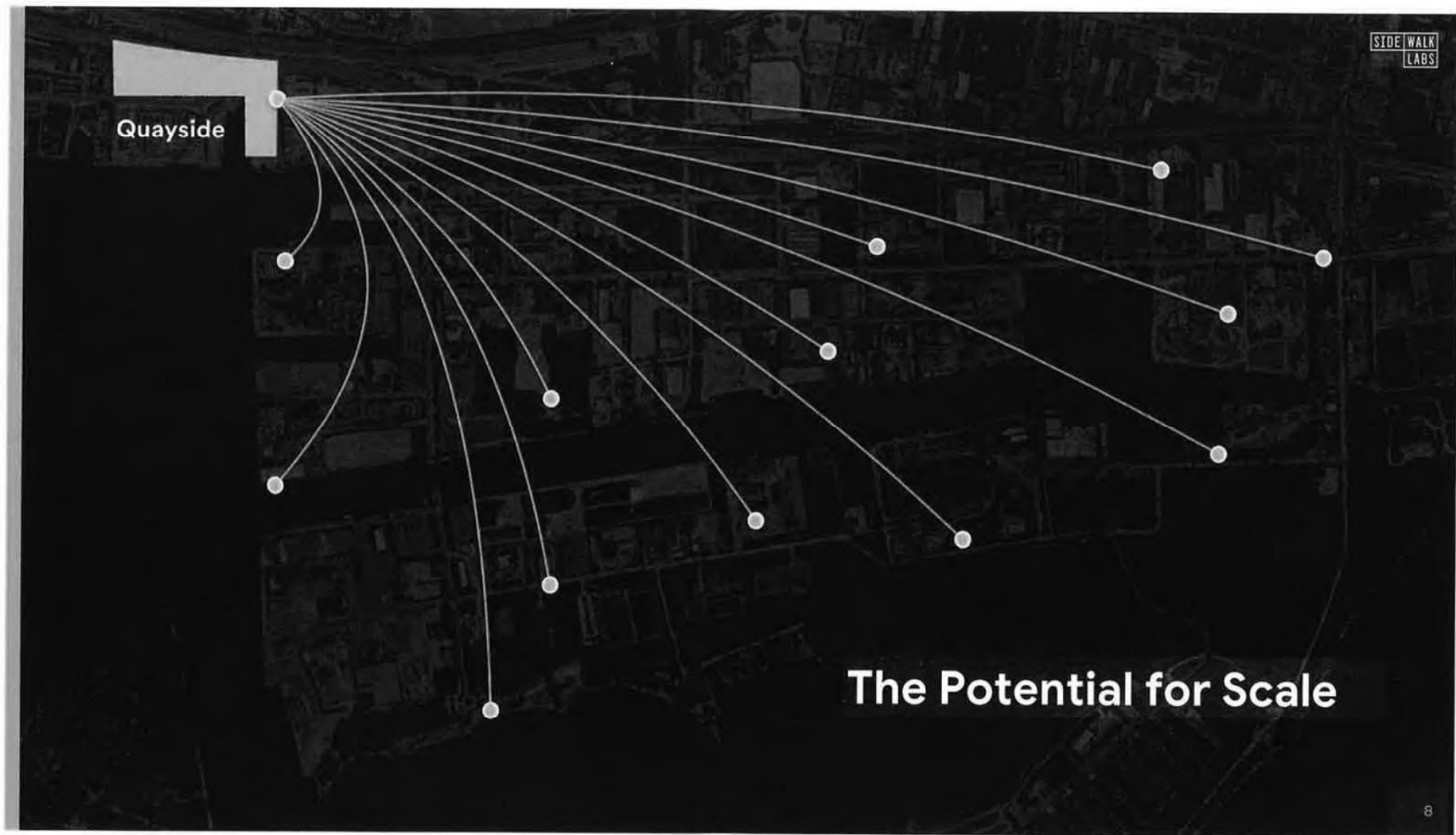
Quayside

A new type of mixed-use, complete community

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7



Our Approach

A new type of mixed-use, complete community

Buildings



A built environment that is more usable, efficient, and affordable

Mobility



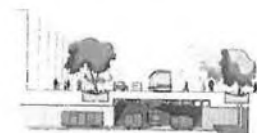
A competitive, safer alternative to the private automobile for every trip

Public Realm



A public realm for the entire region that is delightful and vibrant year-round

Sustainability



A truly climate positive community

Social Infrastructure



A close-knit, healthy community with seamless access to vital daily services

Buildings

**Buildings that are more usable,
efficient and affordable**

- **ADAPTABILITY**
Create structures that are more responsive to the needs of their users over time, both on day 1 and years later
- **COST REDUCTION**
Reduce the cost of construction by leveraging scale through a manufactured approach to buildings
- **SUSTAINABILITY AND WELLNESS**
Build at the highest sustainability standard which positively impacts the environment, lowers cost of utilities, and improves the occupants' well-being
- **DESIGN EXCELLENCE**
Use innovative building design and architectural excellence on the waterfront

Key Goals: Sidewalk Toronto's Vision for Buildings

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Sidewalk Toronto's Plan for Buildings



Radical Mixed-Use

Flexible structures enable radical mixed-use to occur more quickly and at lower cost – responding not only to market demand today but future needs



Flexible Typologies

Flexible spaces enable an adaptable mix of buildings and uses, helping a complete community meet changing needs for affordable housing options and vibrant amenities



Regulatory Frameworks

Outcome-based code is a new set of simplified, highly responsive rules for real-time monitoring, enabling truly mixed-use development to occur safely



Construction Technologies

Digitized construction modeling, robotic construction, on- and off-site automation, and 3D printing can lower construction costs and compress delivery times



Material Innovation (Tall Timber)

Advanced, sustainable materials can improve design flexibility and affordability. In Toronto, we are focusing on locally-sourced tall timber to achieve cost savings, increased speed of construction, and reduced environmental impact

Sidewalk Toronto's Plan for Housing Affordability

There is no greater challenge facing Toronto than housing affordability. Sidewalk Toronto aims to provide more affordable housing, more middle-income housing, and more overall housing options for more people through a suite of policy and design innovations that can set a new standard for other neighbourhoods across Toronto and other cities around the world.

To achieve this vision of a truly mixed income diverse neighbourhood our plan will include:

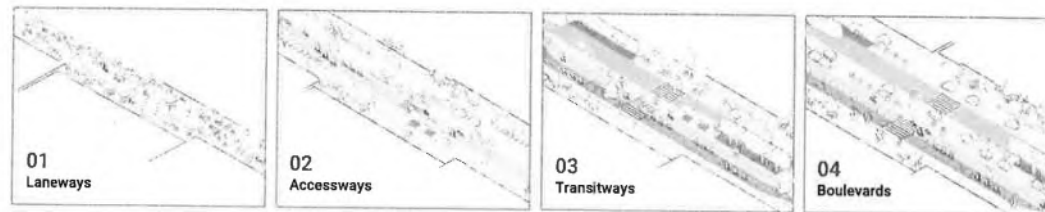
- **More affordable housing.** We aim to **dramatically exceed** requirements for traditional affordable housing units on Toronto's waterfront.
- **More rentals.** We aim to build a significant portion of the development as purpose-built rentals, demonstrating the way forward for other Toronto developers on this essential housing type crucial for affordability.
- **More middle-income housing.** We want to expand the definition of housing affordability and provide options for middle income households.
- **More housing opportunities.** We will test innovative financial and policy structures to address barriers to housing, including shared equity programs that help middle-income households build partial equity, even if they cannot afford traditional homeownership.
- **More affordability by design.** We will leverage building technologies to lower the cost of construction and pass on some of the savings to residents. We also will rethink how we live by redesigning the home to create a more efficient, sustainable residential lifestyle (e.g., co-living).

Mobility

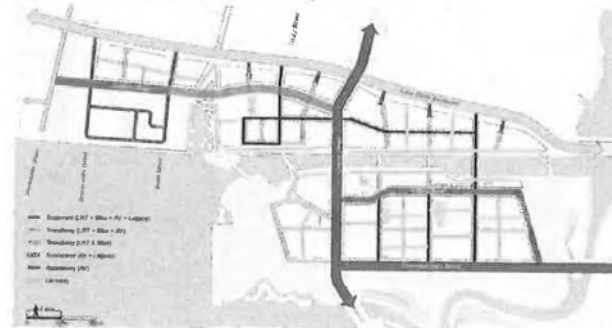
A convenient network of mobility options that doesn't depend on the private automobile

- **EXPAND JOB ACCESS**
Enable access to jobs in Quayside without needing a private car
- **REDUCE HOUSEHOLD COST**
Significantly reduce annual household mobility costs
- **IMPROVE SAFETY**
Achieve Vision Zero fatality rates
- **PROTECT THE ENVIRONMENT**
Significantly reduce environmental impacts by replacing car trips with walking or cycling trips and replacing gas-powered trips with electric vehicles
- **EXPAND PUBLIC SPACE**
Devote more space to public realm uses by dynamically reducing the space devoted to mobility uses to only what is needed

Key Goals: Sidewalk Toronto's Vision for Mobility



2031 Current design of the mobility network



Boulevard Before



Transitway After



Sidewalk Toronto's Mobility Plan

Provide a competitive alternative to the private automobile for every trip

INITIATIVES

Extend the Transit Backbone

- Extend the transit backbone to Quayside and through the Port Lands

Create Streets for People

- Create streets for people making use of future AV

Enable Walking & Cycling

- Promote walking and cycling through design and technology

Provide Alternatives to Auto Ownership

- Provide alternatives to auto ownership with new new mobility, including AVs, and piloting a new mobility as a service offering

Implement a New Freight Transit System

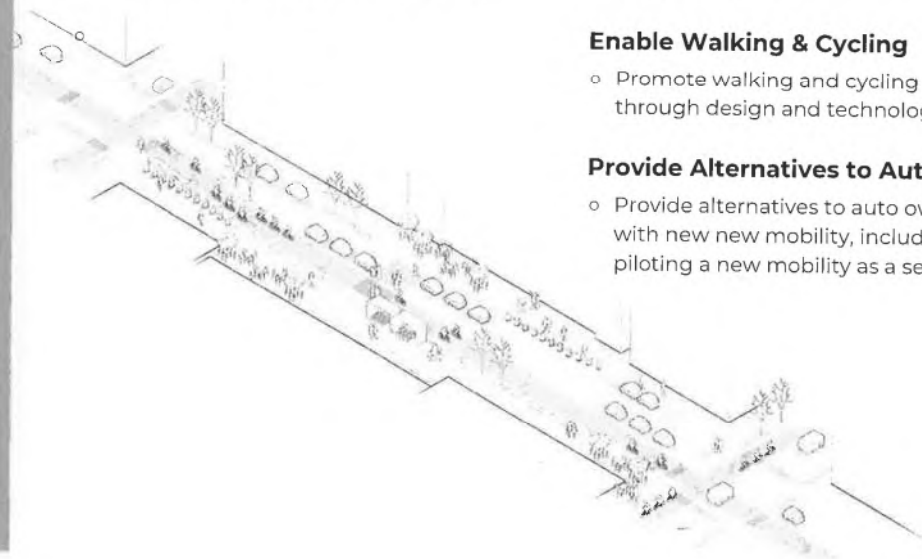
- Create a freight transit system that reduces impact and cost

Manage the Streets

- Manage streets dynamically and optimally

Model for Optimization

- Build and use model to understand likely flows, mode shares, and impact



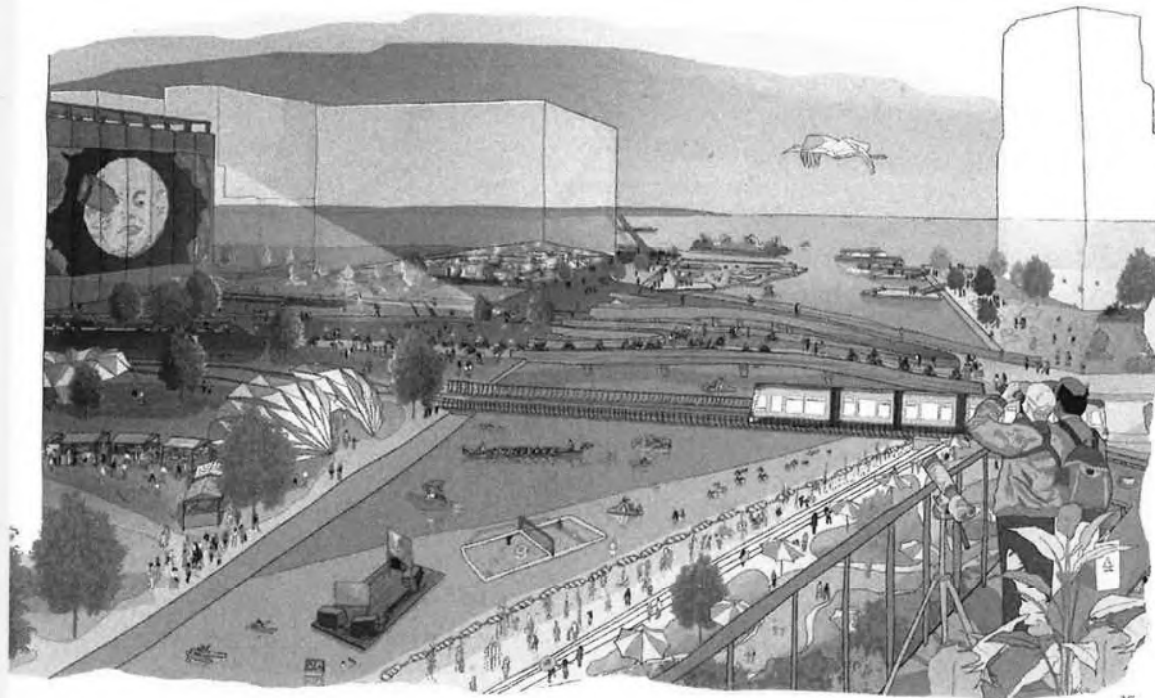
Public Realm

The shared space of the community, it includes all spaces that are accessible to everyone, from parks to streets to the water to markets to shops. Our vision for the public realm includes:

- **MORE TIME SPENT OUTDOORS, TOGETHER**
Foster happy and healthier communities through a vibrant, porous public realm that gives people new levels of agency over their environment
- **MORE SPACE** – Gained from AVs and rise of active transit
- **MORE USES** – For all ages and abilities
- **MORE TIME** – Usable year-round and active ~18 hrs/day
- **MORE PEOPLE** – Inclusive design and empowered community

Key Goals: Sidewalk Toronto's Vision for Public Realm

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Sidewalk Toronto's Public Realm Plan

Public space that reflects what people want

Reshaping the Public Realm

Three strategies to create an expanded public realm

01

Returning to the Water

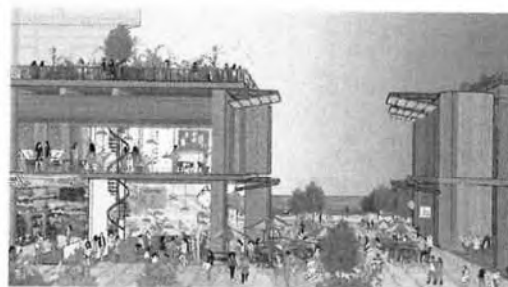
Enabling access to and
interaction with
Lake Ontario



02

Stoa

A new type of porous ground floor
that responds to the community's
changing needs over time



03

Design Streets for People

Put people and street life first
while maximizing safety
and convenience



16

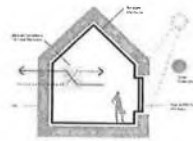
Sustainability

Forging the path to climate positive

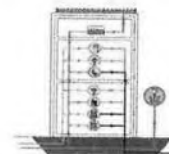
1. Passive-house inspired (low energy) buildings
2. Autonomous building energy management
3. District-wide heat recovery and exchange for building heating and cooling
4. Customer-integrated power grid design and management to minimize cost and GHG
5. Customer feedback on waste generation and diversion from landfill
6. Actively-managed water systems, including stormwater
7. Accessible infrastructure that is easy to maintain, upgrade and sensor

Key Goals: Sidewalk Toronto's Vision for Sustainability

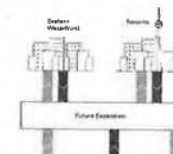
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1 Passive-house buildings



2 Building energy management



3 District-wide heat recovery and exchange



4 Customer-integrated power grid design



5 Customer feedback on waste generation



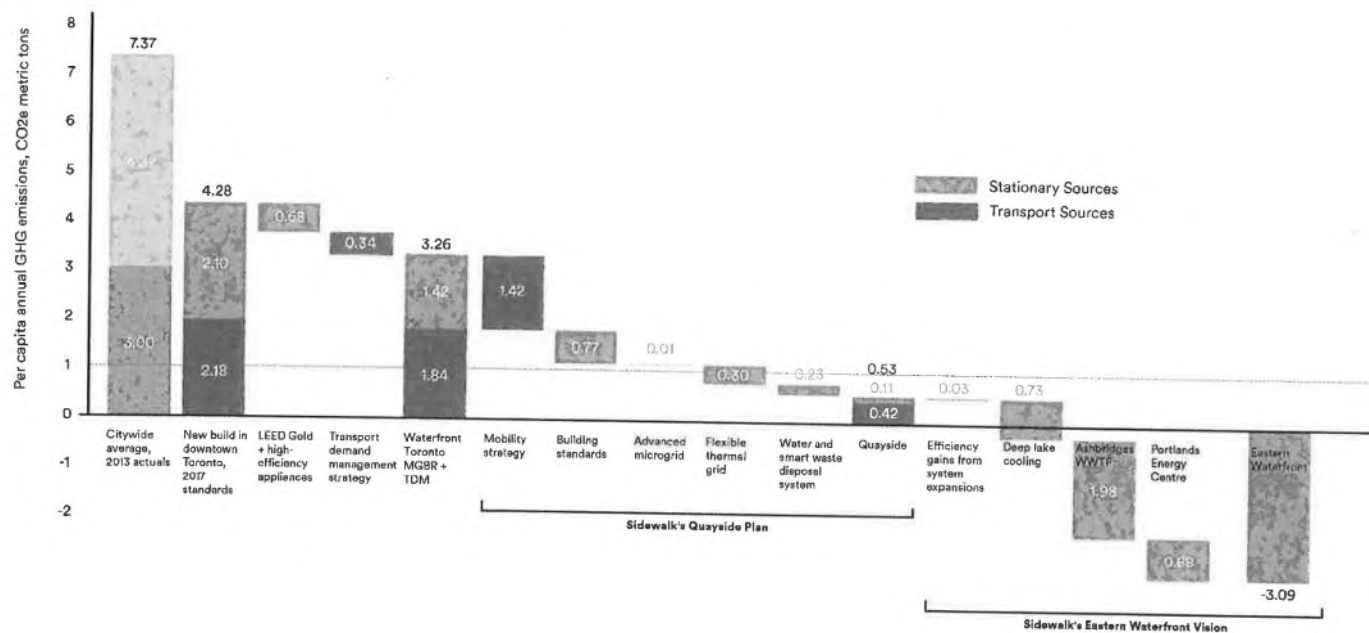
6 Actively-managed water systems,



7 Accessible infrastructure that is easy to maintain

Sidewalk Toronto's Sustainability Plan

Forging the path to climate positive



Social Infrastructure

A holistic approach to community service delivery

- **HEALTH & WELL-BEING**
Enabling a radically proactive, personalized and coordinated approach to health, care and well-being
- **EDUCATION & OPPORTUNITY**
Pushing the boundaries of where, when, and how teaching and learning occur
- **CIVIC LIFE & ENGAGEMENT**
Fostering a civically engaged community underpinned by deep social ties and a strong sense of pride and belonging

Key Goals: Sidewalk Toronto's Vision for Social Infrastructure



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Sidewalk Toronto's Plan for Social Infrastructure

Enabling city and community services innovation through partnership

SWT does not intend to deliver city and community services but seeks to enable local providers and residents to advance their innovation efforts and priorities.

- **Build Community Anchor Sites (*thematic community hubs*)**

- Care Hall: Co-located health & human service delivery and a steward of health and well-being for the community
- Opportunity Hub: Co-located primary school, service delivery site for youth and workforce development supports
- Civic Assembly: A community gathering place for digital literacy, community input, feedback and influence

- **Establish Service Delivery & Programming Partnerships**

- Initiating partnerships with local organizations to enable innovation around the delivery of health and human services, education and community learning, workforce development and civic engagement

- **Catalyze Development & Adoption of Digital Compliments**

- Community as a Classroom digital tool (Q-ED)
- Digitally enabled neighbourhood association
- Community Influence & Investment digital toolkit (i.e. Gather, Quayside Gives, Quayside Decides)
- Digital health tools that address the social determinants of health and enhance connection to community resources
- Research partnerships exploring links between urban data and health

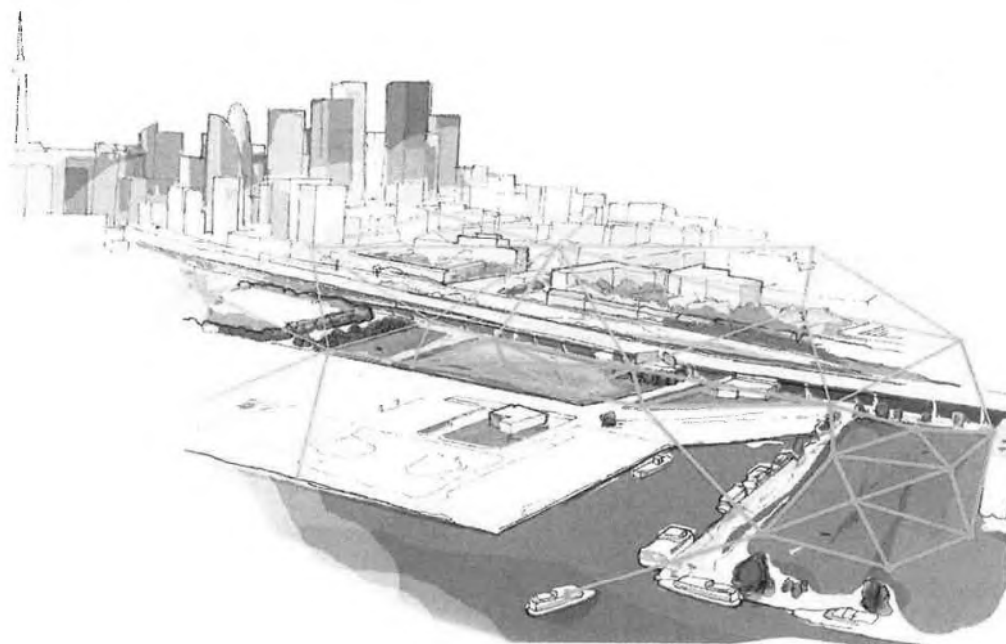
Data Governance

Our approach to digital governance is based on the position that:

- **INDEPENDENT GOVERNANCE** is necessary to protect personal and public interests across areas of data stewardship, privacy, access, and, security—in addition to government enforcement of Canadian and Ontario privacy laws and regulations
- **ALL PARTIES**, including Sidewalk Labs, collecting and/or using data in the physical environment of Quayside will be held to the same high standards of digital governance
- **INFORMATION ARCHITECTURE AND SERVICES** should be open, enabling and promoting innovation by the many, not the few

Key Goals: Sidewalk Toronto's Vision for Data Governance

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Data & Privacy: Our Proposed Approach

Precedent-setting proposal including robust governance, an open system, and protection of data

Private entities should not control/own data collected in the public realm. All companies, including Sidewalk Labs should be subject to one set of rules.

Proposal to Waterfront Toronto on October 15th, 2018

- **Establishment of a Data Trust:** Sidewalk proposes the establishment of an independent Civic Data Trust, which would approve and control the collection of, manage access to, and potentially store data collected in the physical environment, known as "Urban Data."
- **Data Trust to Make Urban Data Freely and Publicly Available:** As a default, the Data Trust would make de-identified Urban Data freely and publicly accessible, eliminating the concept of data ownership. Specific approval by the Data Trust would be required for entities to collect Urban Data with personally identifying information (such as CCTV cameras) or Urban Data collected on a more proprietary basis.
- **Responsible Data Impact Assessments:** Responsible Data Impact Assessments (RDIAs) would be used to ensure Privacy By Design and adherence to Responsible Data Use Guidelines in every part of the project and all collection of Urban Data, whether by Sidewalk or other parties. RDIAs would be filed with the Data Trust before the collection and/or use of any Urban Data within the project geography by any entity.
- **RDIAs and Registry of Devices Maintained by the Data Trust:** RDIAs, along with a registry of devices collecting Urban Data, would be maintained and made publicly available by the Data Trust.
- **An Ecosystem of Technologies by Many Innovators:** Sidewalk anticipates providing specific pieces of critical digital infrastructure and specific, use-case-driven technologies to achieve quality-of-life goals. All technologies provided by Sidewalk will be based on open standards, making it easy for the lion's share of technology in the neighbourhood to be provided by others.
- **Data Always Handled in Accordance with Canadian Law:** To ensure that Canadian law and values are applied to data, Sidewalk Labs will use a toolbox of mechanisms, including contractual protections, technical protections, and edge computing, where data is processed on-device and not transferred to a central server. Sidewalk does not propose a data localization requirement specific to Quayside.

Essential Catalyst

Sidewalk Labs envisions our role as that of an Essential Catalyst.

We will bring in partners from across sectors to design and build a neighbourhood that would currently not be possible. We can test and deploy ideas deemed too risky to be funded by the public or private sector alone, but ones where we think that with our partnerships and patient capital, we can make something great happen.

SIDE WALK LABS

Essential Catalyst

Infrastructure

- Today, there are highly innovative approaches to infrastructure that can change the very nature of how a neighborhood functions but there is often not funding for these kinds of projects. We will create a new funding vehicle to develop and deliver this next generation infrastructure on which this project, and cities of the future around the world, will run.
- This requires substantial investment. As essential catalyst, we can help deliver the investment necessary to deliver the vision of this district.

Design & Technology

- We will develop technologies that integrate into forward-thinking design to enable direct quality-of-life improvements for Torontonians and Canadians.
- We are committed to delivering these technologies, in many cases, through or with partners, many of whom, we hope, will be Canadian startups. This will not preclude others from deploying technology that build on, compete with, or replaces them. Our commitment is for every piece of technology we develop to be based on open standards.
- We believe that any IP created in this project should be shared with our public sector partners.

Economic Development

- This development will bring tens of thousands of new jobs to the Toronto Waterfront and billions of dollars of economic impact to the Canadian economy.
- We aim to make Toronto the global hub for urban innovation including two key anchors:
 - a. Google's Canadian headquarters
 - b. And a new Urban Innovation Institute, which in partnership with Toronto institutions will draw innovators from around the world to the living laboratory in which it will be situated.

Real Estate Development

- This project will require substantial development on parcels of land that have laid fallow for decades.
- We hope most of the development will be executed by others, creating buildings and operating within a framework articulated in the plan we develop with Waterfront Toronto.
- However we recognize that in early phases of the project we may need to do more of the development as new ideas and ways of building are still being tested.

Revenue Model

Infrastructure Investment

- There is not a significant marketplace for funding next-generation infrastructure. We are working to create a vehicle, backed by Alphabet and eventually including Canadian partners, to do so where traditional players will not.
- This will enable investments in things like energy and water systems, freight delivery, utility channels, and more. We expect to make a reasonable return from financing this infrastructure.

Technology Products & Investments

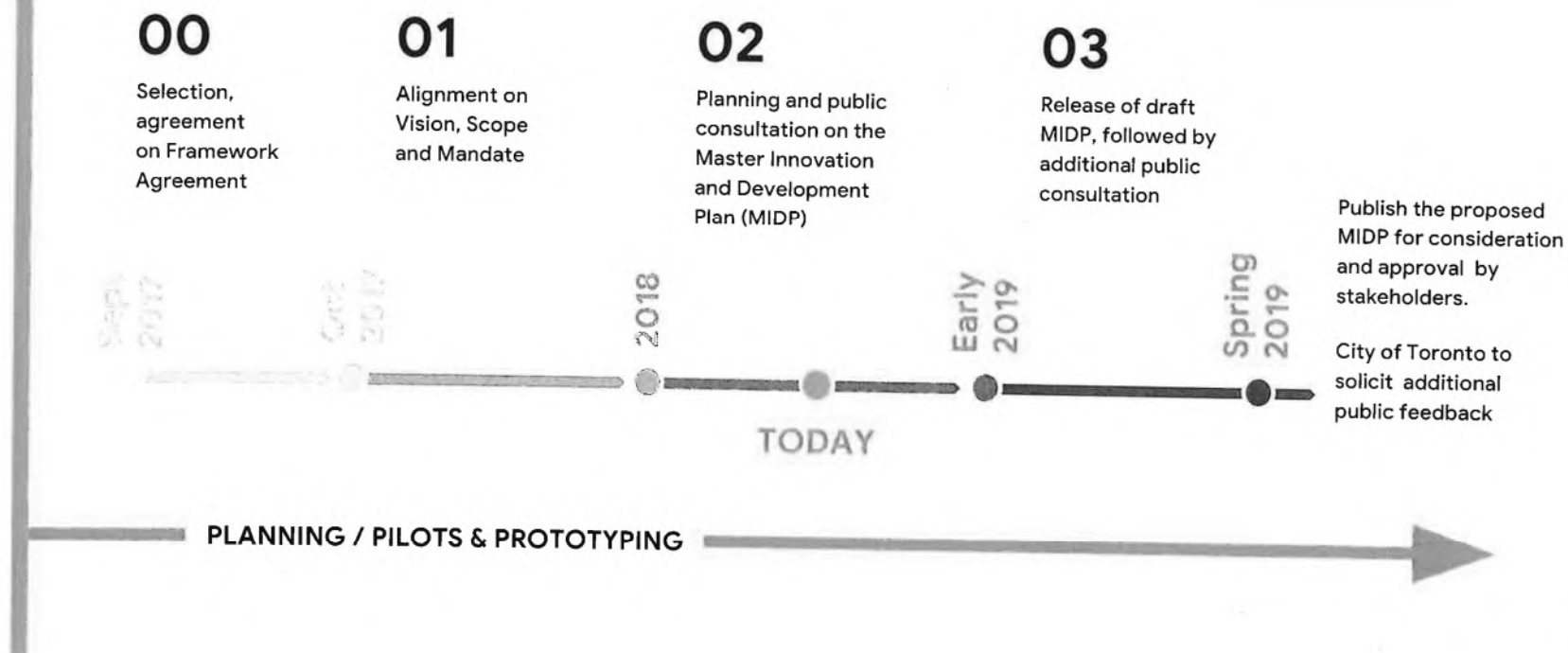
- We intend to deploy a series of new technologies. The costs of research and development may or may not be recouped in the Toronto project, but we would expect to sell into other markets.
- The upside that is created by technology products that would not have come to be if it weren't for the opportunity we are given here should be shared fairly with our public partners.

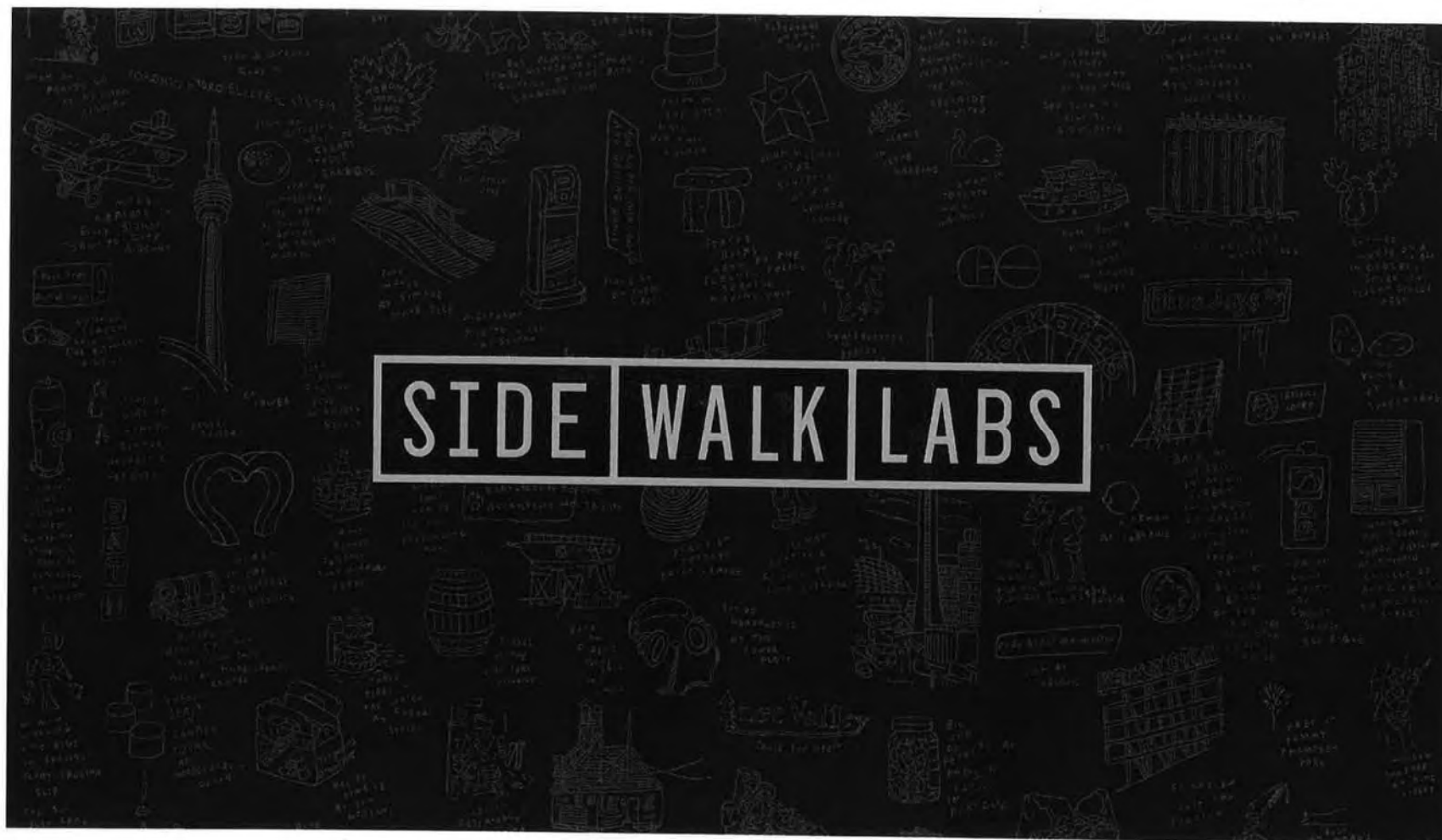
Real Estate Development & Value Capture

- We intend to do limited real estate development, which would generate a return like other development projects.

Master Innovation & Development Plan

Planned schedule and timing







Project Update

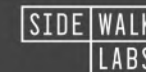
City of Toronto

December 2018

Sidewalk Labs Proprietary and Confidential

Key Objectives

Both the City and Sidewalk Labs have certain objectives that can be aligned as we realize the potential of the Eastern Waterfront.



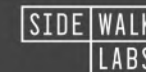
City of Toronto Objectives

- **Adequate control** to ensure the best outcomes for its citizens
- **Strong economic growth and thousands of new jobs** while protecting existing industries in the Port Lands, including film
- **A series of other public policy outcomes** to address certain urban challenges, including sustainability and congestion
- **Substantial increase** in affordable housing
- **Appropriate standard** for data and privacy
- **Build off success**—prove the model
- **Ensure the local development community** plays a prominent role in developing the Port Lands

Sidewalk Labs Objectives

- **Sufficient scale** to achieve its objectives and prove the ability of its approach to positively impact urban quality of life
- **Adequate return** on its investment

Waterfront Toronto's Evaluation Framework



Waterfront Toronto has structured a rigorous framework to evaluate the MIDP proposal that will be delivered in early 2019.



WATERFRONToronto

WATERFRONT TORONTO KEY OBJECTIVES

Priority Outcomes and “Must Do’s” for the MIDP

Job Creation

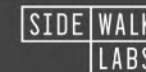
Climate Positive

Housing Affordability

New Mobility

Data Privacy & Digital Governance

Draft Quayside Site Plan



The site plan we presented at Roundtable 4 earlier this month attempts to directly address the primary objectives Waterfront Toronto has included in its MDP Evaluation Framework.

Job Creation: 9,000+ Construction Jobs

Over 9,000 direct and indirect jobs will be created in Ontario as a result of the building construction at Quayside.

Job Creation: Canadian Mass Timber

Catalyzing the Canadian timber industry through an entire district built with mass timber, resulting in new jobs in Ontario and a reduction in the cost of construction.

Climate Positive: 75-85% Reduced Emissions

Targeting 75 - 85% reduction in greenhouse gas emissions at Quayside compared to typical development: from 6.3 tons CO₂ per Torontonians, to <1 ton per Quaysider.

Affordable Housing: 40% Below-Market

20% affordable housing, including 5% deep affordability, and 20% middle-income housing, including mid-range rental and shared equity.

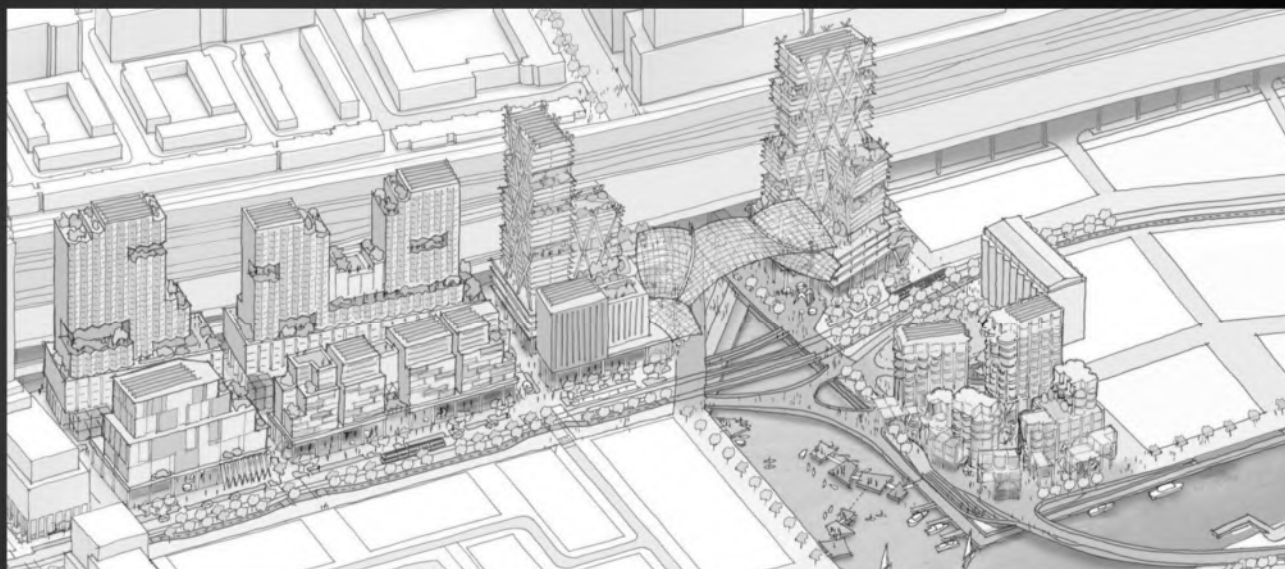
New Mobility: Streets that Work

New mobility including support for the Light Rail Transit, a Vision Zero neighbourhood, and getting ready for an automated vehicle future.

Data Privacy & Digital Governance

Proposed Civic Data Trust as 3rd-party public organization to manage all urban data, protect privacy, promote innovation, and safeguard the public interest.

Sidewalk Labs Proprietary and Confidential



Current Zoning*

93% Residential

20% Affordable Housing

7% Commercial / Retail

3,100 Residential Units

6,200 Residents

*Approx. based on zoning diagrams

Draft Quayside Site Plan

68% Residential (11% Flexible Loft Space)

40% Below Market
• 20% Affordable Housing (includes 5% deeply affordable)
• 20% Middle-Income Housing (includes 5% shared equity)

20% Commercial (3% Flexible Loft Space)

12% Flexible Lower Floors (Stoa: Retail, Production, Arts, Community)

2,500 Residential Units

5,000 Residents (approx.)

Economic Development

9,000+ construction jobs created in Ontario

3,900 jobs located at Quayside long-term

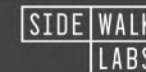
• 3,400 office jobs

• 275 retail jobs

• 150 production jobs

• 75 community jobs

Quayside in Context

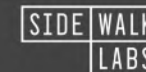


While meeting many of these objectives are achievable on Quayside to a certain extent, the economic and conceptual viability may only be possible at a larger scale.

Thinking at Scale

- From the RFP through the PDA, Waterfront Toronto has always sought solutions to address how we can maximize the impact of the shared objectives of the City, Waterfront Toronto, and Sidewalk Labs, and we have responded as such.
- We believe that while Quayside will be an impactful starting point, scale actually plays a significant role because:
 - The impact of each individual innovation increases (for example, additional affordable housing, greater synergies in cutting carbon emissions, greater ability to reduce car trips, greater catalyzation of the tall timber industry)
 - Greater scale than 12 acres is likely needed to justify the initial investment in prototypes at Quayside
 - Holistic thinking is what can accelerate the provision of infrastructure on the Eastern Waterfront, and more quickly unlock the value of the Port Lands envisioned in the Port Lands Planning Framework
- Scale means different things for different outcomes and investments. The purpose of this conversation is to share (and receive feedback) on some of our underlying assumptions and approach before more detailed conversations on individual initiatives as well as holistic discussion on the business case.

Essential Catalyst: Sidewalk's Role At Quayside and Beyond



The role that Sidewalk Labs envisions is to fill gaps that the public and private sectors are currently unable to fulfill themselves, and which Sidewalk Labs is uniquely able to deliver.

Enabling Infrastructure and LRT

- Facilitate and finance the delivery of infrastructure systems, including the LRT, that accelerate development, meet unprecedented sustainability goals, and may not be possible to finance through traditional processes

Limited Real Estate Development

- Execute a limited amount of vertical development to prove market viability of certain innovations (e.g., mass timber) or to spur specific economic development (Google HQ)

Technology Deployment

- Undertake explorations and prototyping, and provide products that are foundational to achieving the overall objectives

Innovation Management

- **Co-Design:** In collaboration with Waterfront Toronto, develop (1) specific plans, which define development envelope, goals and priority outcomes for each geographic phase, and (2) innovation guidelines for infrastructure systems and vertical development, which will apply to third party developers.
- **Implementation Support:** Provide resources and support to enable ongoing delivery and operations of the project, such as detailed design of infrastructure systems or ground-floor management and programming to enable greater activation

Sidewalk Labs Proprietary and Confidential



Enabling Infrastructure and LRT

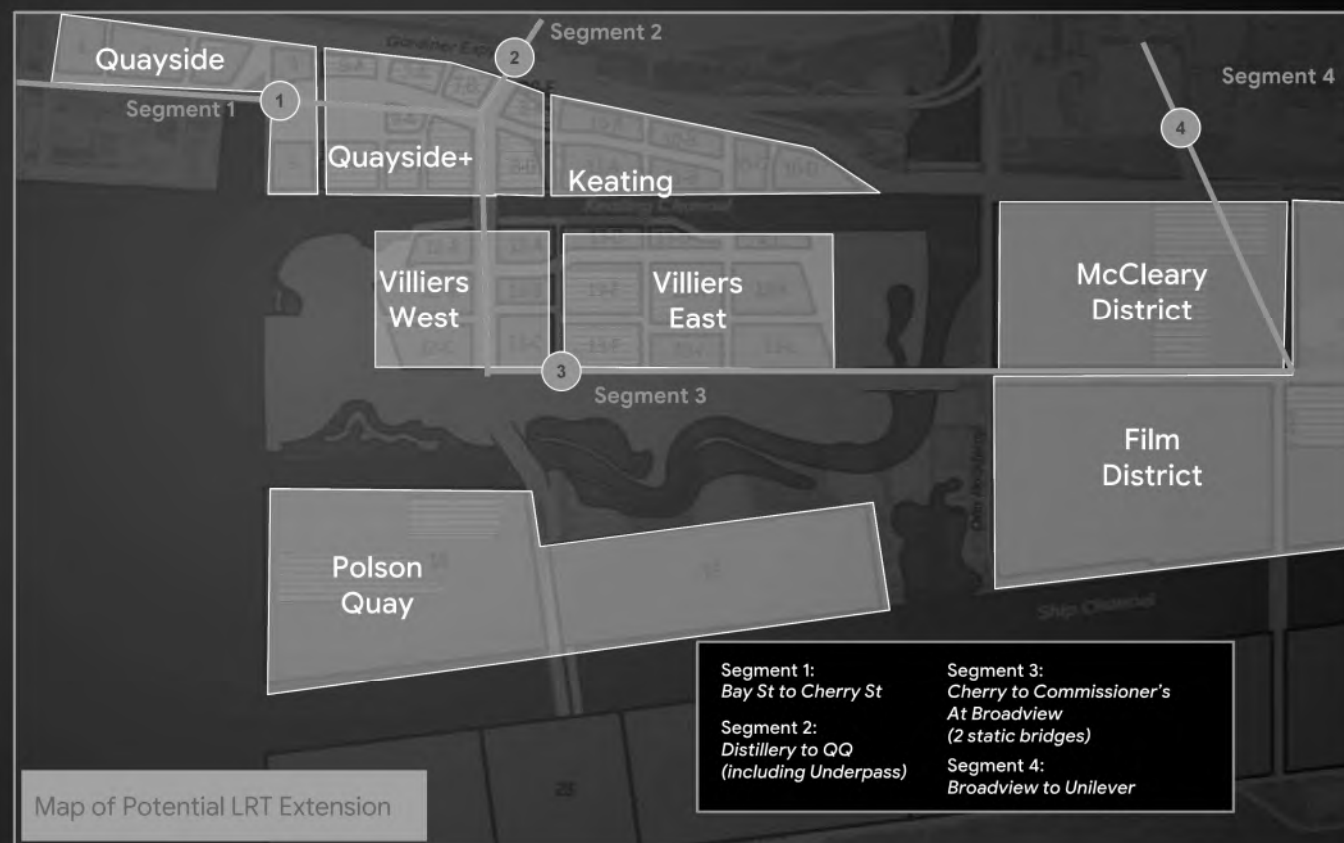
Sidewalk Labs would facilitate and finance the delivery of infrastructure systems, including the LRT, that accelerate development, meet unprecedented sustainability goals, and may not be possible to finance through traditional processes

Infrastructure Delivery

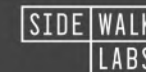
Sidewalk Labs believes holistic infrastructure delivery—a multi-billion dollar undertaking—is critical to unlocking the full potential of the Eastern Waterfront.

Approaches that only rely on public funding could slow development, and limit the ability to make the most aggressive, innovative moves to achieve climate positivity.

Sidewalk Labs would provide up-front financing support for both LRT and horizontal (utilities and public realm) infrastructure by committing capital to the project in advance of it being available through sources that will only *follow* development (such as incremental property taxes and development charges).



Limited Real Estate Development



Sidewalk Labs will execute real estate development on a limited basis to ensure the implementation of counter-to-market programmatic elements.

Vertical Development

Sidewalk Labs proposes undertaking approximately 5-6M SF of vertical development between Quayside and the Western edge of Villiers Island (which will require additional city approvals, including a Google HQ Campus).

Wherever possible, we will partner with local developers to execute these projects. What is most important to Sidewalk Labs is to have control over the built program to ensure adherence to our innovation and policy objectives.

For instance, we will have a higher tolerance for mixed-use experimentation, timber prototypes, and unusual utility infrastructure than a market developer will, until innovations are proven out

This development is only a small portion of the overall project—and the only site beyond Quayside, Villiers West, is for a specific project with unique economic development and catalytic purpose.

Sidewalk Labs Proprietary and Confidential

Potential Google HQ on Villiers Island



Villiers Island | 2027 | Heatherwick Studio

Product Deployment

Sidewalk Labs will undertake explorations and prototyping, and provide products that are foundational to achieving the overall objectives

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Product Deployment

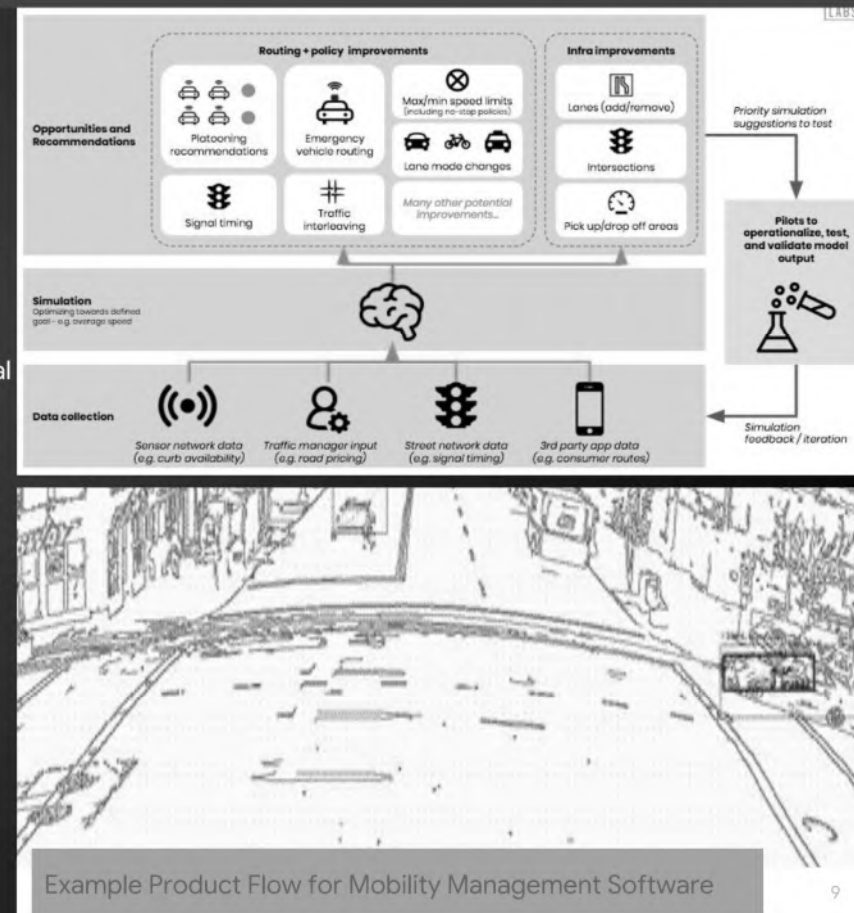
Sidewalk Labs is focusing its product development on a core set of products that we believe are fundamental to our overall approach. These include:

- Software to enable more dynamic management of mobility across modes, by for instance, actively allocating space at curbs according to demand, providing travelers and the services they use more information (such as street closures, wait times, congestion) in real time, and pricing different modes accordingly
- “Koala” or a flexible standardized infrastructure, that can be deployed to provide foundational power and connectivity—like a USB port for the city.
- Software to enable better management of utility systems at the district level—managing demand, lowering overall consumption, improving responsiveness to user preferences, and saving system-wide capex.

While Sidewalk seeks to deploy a limited number of products, our goal is to create an open system that enables others to innovate both from occupancy and over time. It was a purposeful choice to create an open ecosystem, rather than a closed set of standards with which only Sidewalk Labs products would work.

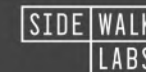
Terms will need to be negotiated individually for each potential product. The City of Toronto will share in the value created when prototyping in Toronto uniquely leads to the ability to bring the product to market.

Sidewalk Labs Proprietary and Confidential



Example Product Flow for Mobility Management Software

Innovation Management



Sidewalk Labs would play an ongoing role, in collaboration with Waterfront Toronto and its government partners, to support both design and implementation.

Innovation Management

Sidewalk's role in Innovation Management falls into two broad categories:

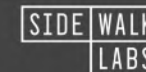
Design:

1. **Specific Plans:** In collaboration with Waterfront Toronto and its government partners, develop specific plans, which define development envelope, goals and priority outcomes for each geographic phase.
2. **Innovation Guidelines:** In collaboration with Waterfront Toronto and its government partners, develop innovation guidelines for infrastructure systems and vertical development, which will apply to third party developers.

Implementation:

1. **Infrastructure Delivery Support:** In order to ensure infrastructure that aligns with project objectives, Sidewalk could manage initial pre-RFP designs of infrastructure systems to adhere to Innovation Guidelines, and play an active role in the RFP process for horizontal infrastructure.
2. **Ongoing Operational and Programming Support:** In order to prove the operational benefits of certain innovations, Sidewalk Labs could play an active role in programming and prototyping, in collaboration with Waterfront Toronto and its government partners, with ideas such as Stoa or adaptive streets.

Draft Deal



With Waterfront Toronto, Sidewalk Labs delivers the infrastructure necessary to enable the development of Villiers Island, McCleary District and Polson Quay consistent with project objectives. Sidewalk Labs also enables the financing of LRT. As the project progresses beyond Quayside, the success of piloted innovations (i.e., mass timber, building standards, new street typologies, digital management of streets) will inform the innovation guidelines rolled out within the area Sidewalk Labs delivers enabling infrastructure.



To recoup and generate a return on its investment, SWL will share in...

- Proceeds from vertical development it performs
- Proceeds from the uptick in land value on publicly sold land within the zone where innovation guidelines apply
- A share of developer charges and incremental tax revenue on land for which Sidewalk Labs provides financing for horizontal infrastructure, including LRT

SWL executes horizontal and real estate development

SWL executes horizontal infrastructure only

SWL executes the Phase 1 LRT extension

SWL shares in incremental land value, incremental property tax and development charges

SWL shares in incremental Property tax for LRT only

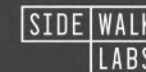
**At Keating Channel, SWL only shares in incremental land value due to existing obligations for Unilever District.

Potential Phase 2 Expansion (Dual Option)

In a potential Phase 2, Innovation Guidelines would extend to Port Lands South and there would be a mutual option for Sidewalk Labs, with Waterfront Toronto, to deliver additional enabling infrastructure, including an extended LRT. The East Port and Film District have been excluded to protect existing uses.



Transaction Principles

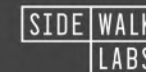


In designing a conceptual framework for an overarching transaction, Sidewalk Labs has followed a set of principles designed to meet both parties objectives.

Transaction Principles

- Whenever possible, utilize financing and implementation mechanisms that have been validated previously
- Whenever possible, match sources and uses to specific deal components, in order to simplify and de-risk the transaction
- Incorporate stage gates and ongoing metrics for accountability
- Protect government partners from unreasonable downside risk
- Ensure third-party participation—and limit Sidewalk Labs' role, particularly in real estate development
- Create a structure that enables Sidewalk Labs to shoulder the burden of upfront risk, and be compensated in later stages

Draft Major Transactional Elements

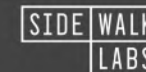


We are seeking feedback on the following conceptual framework.

Conceptual Framework

- **Real Estate Development:** Sidewalk Labs will execute limited real estate development at Quayside and Villiers West. This development will likely be below market due to programmatic (more commercial and social infrastructure space) and innovation (tall timber prototypes, dynamic curb) decisions to achieve objectives that go against market pressure.
- **LRT Extension:** A PILOT/Tax-Increment Financing (TIF) zone based on property taxes would be created in order to finance the delivery of an LRT extension. Sidewalk Labs would provide upfront debt service support, and potentially equity, in order to facilitate delivery in advance of the realization of incremental property tax revenues. As compensation for shouldering this upfront risk, Sidewalk Labs would receive a return on its equity investment. If incremental property taxes are realized in excess of the amount needed for SWL to receive its preferred return, additional property taxes will not be shared with SWL.
- **Horizontal Infrastructure:** Development Charges within the project geography would be isolated in order to pay for horizontal infrastructure development. Sidewalk Labs would finance infrastructure delivery in advance of the realization of development charges. As compensation for shouldering this upfront risk, Sidewalk Labs would receive a return on its investment. If development charges are assessed in excess of the amount needed for SWL to receive its return, additional development charges will not be shared with SWL.
- **Value Creation:** To compensate Sidewalk for 1) Below market real estate development and 2) the overall catalyzation of the Eastern Waterfront, Sidewalk Labs would receive a share of the incremental land value created through the disposal of publicly-held lands to third parties in the entirety of the project geography.
- **Product Deployment:** Sidewalk Labs will deploy a limited number of technology products throughout the district at terms to be negotiated in advance of the signing of Implementation Agreements. The City of Toronto will share in the value created when prototyping in Toronto uniquely leads to the ability to bring the product to market.
- **Innovation Management** Sidewalk Labs would play a role related to ongoing participation in Toronto in its role as Innovation Manager, in collaboration with Waterfront Toronto, City Planning, and other governmental entities.

Next Steps



Next Steps

1. Receive feedback from Waterfront Toronto regarding the transaction framework overall, and each individual component specifically.
2. Work through City feedback and business case as part of ongoing working process with Waterfront Toronto and the City, and together bring back a more detailed presentation in January that includes initial, draft numbers
3. Together with Waterfront Toronto, design a working process that enables productive sessions as the project continue to evolve
4. As part of that process, schedule Individual follow-up sessions with Waterfront Toronto, including on:
 - Innovation Manager Role
 - Financing Structures, including Global and Canadian Precedents
 - Holistic Planning Vision for the Eastern Waterfront, and comparison to the PLPF

**Pages 467-480
are withheld
pursuant to paragraphs
20(1)(b), 20(1)(c) & 20(1)(d)
of the *Access to Information Act***

**Les pages 467-480
Font l'objet d'une exception totale
conformément aux dispositions des
paragraphes
20(1)(b), 20(1)(c) & 20(1)(d)
de la *loi sur l'accès à l'information***